About this document

This document sets out in draft the conclusions of our review of the UK’s Fixed Access Markets.

These markets cover the access connections used to provide telephone and broadband internet services (including superfast broadband) to residential and business consumers.

This document sets out the regulatory policies that we are introducing in these markets. These policies aim to promote competition and investment, which we believe will continue to deliver substantial benefit to consumers.

Our assessment is focused on the wholesale level - the services bought by communications providers like Sky, TalkTalk and BT Consumer - as this has proved to be the best way of ensuring strong, effective competition at the retail level.

This review includes the following markets: Wholesale Local Access (the physical connection between the home/business location and the telephone exchange); Wholesale Fixed Analogue Exchange Lines (standard analogue telephone services) and; Wholesale ISDN2 and ISDN30 (digital telephone services, primarily for business use).

The regulatory policies in these markets are intended to maintain confidence for investment and competition as the market moves from copper-based telecoms services to fibre-based superfast services.

An important issue is the margin available to competitors when selling fibre-based superfast services that are based on wholesale inputs which they buy from Openreach. We will shortly be publishing a consultation setting out our proposals on this issue.

This draft Statement is being notified to the European Commission for its comments. Once this notification process is complete, we will publish a final Statement to bring our decisions into effect.
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Section 1

Executive summary

Introduction

1.1 This Statement sets out decisions arising out of our review of certain fixed access markets in the United Kingdom (‘UK’). The review covers the next three years and has been conducted under the European Framework for Electronic Communications. Throughout this document, the review is referred to as the ‘Fixed Access Market Reviews’ or ‘FAMR.’

1.2 In this Statement, we set out our assessment of the fixed access markets and whether any of these markets are not effectively competitive as a result of any communication provider (‘CP’) having significant market power (‘SMP’). We then set out the regulatory obligations to address the competition concerns we have identified arising out of that SMP. This includes, for example, requirements to provide services and, in some cases, controls on the prices charged for such services. In each case, we explain the approach we have adopted, the analysis that has been undertaken and our conclusions.

1.3 The new obligations imposed in this review will replace the existing obligations in the fixed access markets and will in most cases take effect from the publication of the final Statement.

Background

1.4 The FAMR has considered whether and to what extent regulation is needed for the next three years in the following markets in the UK:

- Wholesale Fixed Analogue Exchange Lines (‘WFAEL’);
- wholesale ISDN30;
- wholesale ISDN2; and
- Wholesale Local Access (‘WLA’).

1.5 We have also looked at the retail markets for fixed analogue exchange lines, ISDN30 and ISDN2 in the Hull area, and the retail ISDN2 market in the UK excluding the Hull Area.

1.6 In the course of this review, we published the following consultation documents:

- Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 – Call for inputs, 9 November 2012 (‘the 2012 FAMR Call for Inputs’);
- Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - Consultation on the proposed markets, market power determinations and remedies, 3 July 2013 (‘the July 2013 FAMR Consultation’);
- Fixed access market reviews: approach to setting LLU and WLR charge controls, 11 July 2013 (‘the July 2013 LLU WLR Consultation’);

- Fixed access market reviews: Openreach quality of service and approach to setting LLU and WLR charge controls, 19 December 2013 (‘the December 2013 LLU WLR Consultation’); and

- Fixed access market reviews: Further consultation on notification periods, compliance with requirements on the VULA margin, and approach to pricing for TRCs and SFIs, 16 January 2014 (‘the January 2014 FAMR Consultation’).

1.7 We are also, at the same time as carrying out this review, carrying out a review of the Wholesale Broadband Access Market and a review of regulatory financial reporting. Our conclusions for both these reviews have been published at the same time as this Statement.

1.8 Finally, we have decided to consult further on our proposals for addressing the margin set by BT for Virtual Unbundled Local Access (‘VULA’), and so this Statement does not reach any decisions on remedies dealing with this issue. The consultation will be published shortly and we expect to conclude on this later this year.

**Summary of conclusions**

**Market definition and SMP assessment**

1.9 We have identified the same markets and made the same market power determinations as were made in the most recent set of reviews for these markets (with the exception of the retail ISDN2 market in the UK excluding the Hull area, and retail markets in the Hull Area).

**WFAEL**

1.10 Wholesale fixed analogue exchange lines are a narrowband access service supporting standard analogue telephony services (such as voice and, historically, facsimile and dial-up internet services).

1.11 We define the following markets:

- Wholesale fixed analogue exchange lines in the UK excluding the Hull Area; and

- Wholesale fixed analogue exchange lines in the Hull Area.

1.12 We find that BT continues to have SMP in the wholesale fixed analogue exchange lines market in the UK excluding the Hull Area and that KCOM has SMP in the Hull Area.

**ISDN30**

1.13 ISDN30 is an access service supporting up to 30 narrowband 64kbit/s channels and is used most commonly to provide multiple telephone lines to larger business sites.

1.14 We define the following markets:

- Wholesale ISDN30 exchange line services in the UK excluding the Hull Area; and
• Wholesale ISDN30 exchange line services in the Hull Area.

1.15 We find that BT has SMP at the wholesale level in the UK excluding the Hull Area, and KCOM has SMP at the wholesale level in the Hull Area.

**ISDN2**

1.16 ISDN2 is a narrowband access service designed to cater for smaller business sites with single line ISDN2 services providing 2 channels (each 64kbit/s). We define the following markets:

• Wholesale ISDN2 exchange line services in the UK excluding the Hull Area;
• Wholesale ISDN2 exchange line services in the Hull Area; and
• Retail ISDN2 exchange line services in the UK excluding the Hull Area.

1.17 We find BT has SMP at the wholesale level, but no SMP at the retail level in the UK excluding the Hull Area, and KCOM to have SMP at the wholesale level in the Hull Area.

**Other retail markets in the Hull Area**

1.18 Previous reviews have identified the following markets:

• Retail fixed analogue exchange lines in the Hull Area;
• Retail ISDN2 exchange line services in the Hull Area; and
• Retail ISDN30 exchange line services in the Hull Area.

1.19 Having applied the three-criteria test\(^1\) in accordance with the European Commission’s Recommendation on relevant product and service markets in which ex ante regulation may be warranted (‘the Relevant Markets Recommendation’)\(^2\), we consider that competition law is now sufficient to address any competition concerns identified in each of these markets. Therefore, in light of this, we consider that it is not appropriate to identify and analyse these retail markets in the Hull Area.

**WLA**

1.20 WLA refers to the fixed connection from the local exchange/access node to the end-user. That connection is an input into a variety of retail services – narrowband telephony, broadband (both standard and superfast), ISDN2, and ISDN30.

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\(^1\) The test sets out those conditions which must be met to warrant the imposition of ex ante regulation in markets not listed in the EC Recommendation: the presence of high and non-transitory barriers to entry (of a structural, legal or regulatory nature); a market structure which does not tend towards effective competition within the relevant time horizon (examining the state of competition behind the barriers to entry); and the insufficiency of competition law alone to adequately address the market failure(s) concerned.

1.21 We define the following markets:

- the supply of loop-based, cable-based and fibre-based wholesale local access at a fixed location in the UK excluding the Hull Area; and
- the supply of loop-based, cable-based and fibre-based wholesale local access at a fixed location in the Hull Area.

1.22 We find that BT and KCOM have SMP in the UK excluding the Hull Area and the Hull Area respectively.

Remedies

1.23 We first detail the general remedies we are imposing on BT and KCOM for all markets where we have identified SMP, before detailing the specific access remedies we are imposing on BT for each market.

General remedies

1.24 We are maintaining, for the most part, the current set of general remedies imposed in the markets in which we have found SMP in the UK excluding the Hull Area and the Hull Area respectively. These include: a requirement to provide network access on reasonable request; request for new network access; no undue discrimination; Equivalence of Inputs; requirement to publish a Reference Offer; requirement to notify charges, terms and conditions; requirement to notify technical information; cost accounting; and accounting separation. Our analysis indicates that these remedies continue to be appropriate, though in some areas they have been modified or extended.

1.25 The more substantive changes, and our reasons for them, are set out in summary below.

Quality of service

1.26 To address concerns in relation to quality of service delivery with respect to the provision of access services, we have decided to specify the minimum set of services against which BT is required to offer SLAs and SLGs; we also impose additional obligations which we set out in the section on quality of service remedies.

Equivalence of Inputs (‘EOI’)

1.27 We are imposing an obligation on BT to provide network access on an EOI basis.

Price notification

1.28 We have reduced the notice period for ISDN2 down to 28 days. We are also setting 28 days notice for price reductions (including special offers) for WLA products and WLR rentals.

3 General remedies are remedies not specific to any particular product or service, but which provide general obligations which apply to most, if not all, products and services with the aim of promoting competition.
Statement of Requirements (‘SoR’)

1.29 BT’s SoR guidelines will be required to meet the principle that, where BT rejects a request for new network access, the decision is clear and transparent. We also provide guidance on how any confidentiality concerns arising out of this requirement might be addressed, including the use of the Office of the Telecommunications Adjudicator and independent consultants.

Quality of service

1.30 In addition to the relevant general remedies noted above, we also impose additional obligations in respect of quality of service. Specifically we:

- require BT to meet minimum standards for specified services in the WLA and WFAEL markets; and
- require BT to provide and publish specified KPIs for WLA, WFAEL, ISDN2 and ISDN30.

1.31 In addition, we set out our expectation for the process of negotiating new, or modifications to, SLAs and SLGs

WLA – Next Generation Access (‘NGA’) remedies

VULA

1.32 VULA provides CPs with access to BT’s NGA network through a virtual connection giving them a defined link to their customers, with substantial control over that link. We are maintaining the obligation on BT to provide VULA services to all CPs on reasonable request.

VULA characteristics

1.33 We consider that the current VULA characteristics remain appropriate for the next market review period.

VULA pricing

General approach to VULA pricing

1.34 We will not regulate the level of VULA prices during the next market review period, allowing BT to retain pricing flexibility on NGA pricing. In particular, we consider that competitive constraints will reduce the risk of unregulated VULA pricing levels (such as the pricing of current generation access (‘CGA’) services and Virgin’s services). Further, there remains uncertainty about future demand for NGA services and the time profile over which NGA investment should be recovered. As such, determining the level of charges remains difficult and carries a risk of setting inappropriate price levels that would harm incentives for efficient investment (either expanding the network or improving technology) and BT’s ability to experiment with pricing to encourage fibre take-up.

VULA switching

1.35 While our general approach to VULA pricing, is to provide BT with pricing flexibility over the level of VULA charges, we consider that it is appropriate to distinguish
switching costs from the general pricing approach as the costs of switching are important for retail competition (this is particularly important in light of BT’s high share of retail VULA connections).

1.36 In light of this, we consider that the current £50 charge for VULA to VULA migrations is high, particularly when benchmarked against similar services/activities (such as WBC-FTTP, WLR Transfer and IPStream migrations). As such we are imposing a cost-based charge control for the VULA to VULA migration charge, setting the price at £11.

1.37 In addition, in order to further facilitate switching and promote retail competition for VULA-based services, we are also imposing a one month minimum term for VULA migrations at the wholesale level.

**SLU**

1.38 SLU allows CPs to deploy their own NGA network between the exchange and (usually) the cabinet, using BT’s lines from the cabinet to the end-user. We are maintaining the obligation on BT to offer SLU across the UK excluding the Hull Area to all CPs on reasonable request. This will provide CPs with a complementary alternative to VULA to offer superfast services by deploying their own NGA networks, or to exploit areas where NGA has not been deployed (e.g. the final 10% of households which are not addressed through the current Broadband Development UK programme).

1.39 With respect to pricing, we have imposed a Basis of charges obligation to address the risk of excessive prices. The relevant condition sets out that prices should be set to reflect the price differentials for the corresponding LLU services (given that they draw on the same costs). We have also provided guidance on our position on vectoring and SLU.4

**PIA**

1.40 PIA provides other CPs with access to BT’s network infrastructure (e.g. ducts and poles) to enable those CPs to deploy their own NGA networks. We are maintaining an obligation on BT to offer PIA across the UK excluding the Hull Area to CPs on reasonable request, for the deployment of access networks. This will provide other CPs with a complementary alternative to VULA for offering superfast services by deploying their own NGA networks or to exploit areas where NGA has not been deployed (e.g. the final 10%).

1.41 With respect to pricing, we are imposing a Basis of charges obligation to address the risk of excessive prices. The relevant condition sets out that charges should be reasonably derived from the costs of provision based on a forward looking long run incremental cost approach, which allows for an appropriate mark up for the recovery of a fair and reasonable share of common costs including an appropriate return on capital employed, which might include a ‘risk premium’ where appropriate.

4 Vectoring reduces crosstalk on copper lines and can enable higher speeds than currently possible over FTTC, or enable existing performance to be maintained, for example as take-up of FTTC increases. However, it generally requires control of all the lines in a single cable in order to be effective and so the introduction of SLU (so that some lines are controlled by another CP) can reduce the effectiveness of vectoring, potentially significantly.
WLA – CGA remedies

1.42 LLU enables other CPs to take control of BT’s physical telephone lines so that they can provide services direct to consumers. This has been a very successful remedy in promoting competition and investment. Take-up is high and, despite competition from NGA-based services, is likely to remain so over the next review period. We are therefore continuing to require BT to offer an LLU product and ancillary services to all CPs on reasonable request.

1.43 To address the risk of excessive pricing, we are imposing charge controls for LLU rentals and certain other ancillary services, including migrations and new provides, while removing the current Basis of charges obligation for these services. In summary, the main charge controls are imposed as follows:

Table 1.1: LLU charge controls 2014-17

<table>
<thead>
<tr>
<th>Basket/service</th>
<th>Charges at 31 March 2014 (£)</th>
<th>Nominal charges for 2014/15 (£)</th>
<th>Charge control for 2015/16 to 2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPF Rental</td>
<td>83.92</td>
<td>86.10</td>
<td>CPI+0.3%</td>
</tr>
<tr>
<td>SMPF Rental</td>
<td>9.89</td>
<td>5.54</td>
<td>CPI-33.4%</td>
</tr>
<tr>
<td>MPF Single Migration</td>
<td>30.65</td>
<td>30.77</td>
<td>CPI-1.7%</td>
</tr>
<tr>
<td>MPF Bulk Migration</td>
<td>28.42</td>
<td>25.92</td>
<td>CPI-10.9%</td>
</tr>
<tr>
<td>SMPF Single Migration</td>
<td>30.65</td>
<td>30.77</td>
<td>CPI-1.7%</td>
</tr>
<tr>
<td>SMPF Bulk Migration</td>
<td>28.42</td>
<td>25.92</td>
<td>CPI-10.9%</td>
</tr>
<tr>
<td>SMPF New Provide</td>
<td>30.65</td>
<td>30.77</td>
<td>CPI-1.7%</td>
</tr>
<tr>
<td>MPF New Provides basket</td>
<td>Various</td>
<td>Various</td>
<td>CPI-2.9%</td>
</tr>
<tr>
<td>Hard Ceases basket</td>
<td>Various</td>
<td>Various</td>
<td>CPI+0.4%</td>
</tr>
<tr>
<td>Other LLU ancillaries basket</td>
<td>Various</td>
<td>Various</td>
<td>CPI-5%</td>
</tr>
<tr>
<td>Co-Mingling New Provides and Rentals basket</td>
<td>Various</td>
<td>Various</td>
<td>CPI-3.4%</td>
</tr>
<tr>
<td>Tie Cables basket</td>
<td>Various</td>
<td>Various</td>
<td>CPI-11.8%</td>
</tr>
</tbody>
</table>


1.44 We are also imposing a Basis of charges obligation on electricity charges, requiring charges to be set on the basis of wholesale electricity charges plus an appropriate mark-up to reflect costs.

5 Charges apply from 1 July 2014 to 31 March 2015. This is also true for all subsequent tables referring to charges set for 2014/15.
WFAEL

1.45 WLR (WFAEL) allows OCPs to compete with BT’s downstream businesses. The remedy has been, and continues to remain, a key support of effective competition in the provision of fixed narrowband services at the retail level. We are therefore maintaining an obligation on BT to provide WLR (WFAEL) to all CPs on reasonable request.

1.46 To address the risk of excessive pricing, we are imposing a charge control for WLR rentals, transfers and new provides, while removing the current Basis of charges obligation. In summary, the main charge controls relating to WLR (WFAEL) (and SMPF) are imposed as follows:

Table 1.2: WLR charge controls 2014-17

<table>
<thead>
<tr>
<th>Basket/service</th>
<th>Charges at 31 March 2014 (£)</th>
<th>Proposed Charge for 2014/15 nominal (£)</th>
<th>Proposed Charge control for 2015/16 to 2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLR Rental</td>
<td>93.32</td>
<td>91.04</td>
<td>CPI-3.0%</td>
</tr>
<tr>
<td>WLR Transfer</td>
<td>3.39</td>
<td>4.63</td>
<td>CPI+34.4%</td>
</tr>
<tr>
<td>WLR Connections basket</td>
<td>Various</td>
<td>Various</td>
<td>CPI-8.4%</td>
</tr>
<tr>
<td>WLR+SMFP Simultaneous Connections</td>
<td>Various</td>
<td>Various</td>
<td>CPI-8.4%</td>
</tr>
<tr>
<td>WLR+SMFP Simultaneous Migration</td>
<td>65.51</td>
<td>30.77</td>
<td>Same charge as single migrations</td>
</tr>
<tr>
<td>WLR Conversion</td>
<td>34.86</td>
<td>30.77</td>
<td>CPI-1.7%</td>
</tr>
<tr>
<td>Caller Display</td>
<td>6.00</td>
<td>0.45</td>
<td>£0.45</td>
</tr>
</tbody>
</table>

Source: Ofcom (except where otherwise indicated). Current charges available on Openreach price list http://www.openreach.co.uk/orpg/home/products/pricing/loadPricing.do.

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6 This is a basket of two connection services in BT’s price list, see here: http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=ccWy9ZJoVtf1gb2YRVL3pYSkcG%2Bc%2B30URCuKygKmgSNUNeiS4WkJBRh6z%2FRUAlta4mt5rEro1A7%0Aw5V8nzAZpQ%3D%3D. In particular, services ‘Supply of new Basic line - Per line’ which we refer to as ‘WLR Standard Connection’ and ‘Supply of new line - Per line – using previously stopped LLU MPF line’ which we refer to as ‘WLR Start of Stopped MPF Line.’

7 WLR+SMFP Simultaneous Connection is the term we use in this document to refer to the discounted price applied to WLR Connections when this service is provided simultaneously alongside SMPF New Provide.

8 We impose a charge discount on WLR Connections when provided simultaneously with SMPF New Provide of £12.82 in the first year of the charge control. In subsequent years, we apply a CPI+X% annual change to the charge discount value in the previous year, with the Xs being +74.7% in 2015/16 and +31.1% in 2016/17.

9 WLR+SMFP Simultaneous Migration is the term we use in this document to refer to the discounted price applied to WLR Conversions when this service is provided simultaneously alongside SMPF New Provide.

10 The charge control on WLR+SMFP Simultaneous Migrations will be aligned with the charge control on single migrations (i.e. MPF Single Migrations, SMPF Single Migrations, SMPF New Provide and WLR Conversions).
ISDN30

1.47 We are maintaining the obligation on BT to provide wholesale ISDN30 to allow other CPs to compete with BT in the provision of downstream services. To address the risk of excessive pricing, we are setting a charge control on wholesale ISDN30 services based on the current level of charges (set by reference to prices as they were in December 2013). This means charges will fall in real terms (i.e. after taking into account general inflation) over the period of the control.

ISDN2

1.48 We are maintaining the obligation on BT to provide wholesale ISDN2 to allow other CPs to compete with BT in the provision of downstream services. To address the risk of excessive pricing, we are imposing a charge control while removing the current Basis of charges obligation. We are imposing, on a basket of ISDN2 rentals and connections, a cap on average charges based on their current levels, which means average charges will fall in real terms (i.e. after taking into account general inflation). In addition, we are imposing a separate control on ISDN2 transfers set at £9 per line (or £4.50 per channel).

TRCs/SFIs

1.49 TRCs are services involving engineering work which is not included within service level agreements with BT. SFIs are services requested by CPs for further investigation of potential broadband faults on MPF and SMPF lines where no fault has been found using the standard Openreach line test.

1.50 We are imposing charge controls on both TRCs\(^{11}\) and SFIs\(^{12}\) to address the risk of excessive pricing and to provide efficiency incentives. We are imposing a one-off reduction to each and every TRC charge, with the following 2014/15 charges implemented on 1 July 2014:

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\(^{11}\) Imposed in respect of those TRCs which are within the scope of network access requirement for the provision of services based on LLU, WLR, ISDN30 WLR and ISDN2 WLR.

\(^{12}\) Imposed in respect of those SFI which are within the scope of network access requirement for the provision of services based on LLU.
Table 1.3: TRC Controls (rounded to the nearest penny)

<table>
<thead>
<tr>
<th>TRC product</th>
<th>Normal working day</th>
<th>All other times except Sundays and Public / Bank Holidays</th>
<th>Sundays and Public/ Bank Holidays</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Chargeable Visit (Visit plus up to 1 hours work)</td>
<td>£120.00</td>
<td>£95.73</td>
<td>£150.00</td>
</tr>
<tr>
<td>Additional Hours (or Part thereof)</td>
<td>£60</td>
<td>£43.13</td>
<td>£90.00</td>
</tr>
<tr>
<td>Supplementary charges (Per Visit)</td>
<td>N/A</td>
<td>N/A</td>
<td>£30.00</td>
</tr>
<tr>
<td>Supplementary charges (Per Hour or Part thereof)</td>
<td>N/A</td>
<td>N/A</td>
<td>£30.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRC name</th>
<th>Charges at 31 March 2014</th>
<th>Proposed charges for 2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal and External Shifts (per order)</td>
<td>£120.00</td>
<td>£105.20</td>
</tr>
<tr>
<td>Additional Line shifted (per order)</td>
<td>£60.00</td>
<td>£52.60</td>
</tr>
</tbody>
</table>

1.51 Each charge will be subsequently indexed to +0.2% per year.

1.52 SFI module prices as at 1 July 2014 will be calculated based on an hourly charge component multiplied by a reasonable determination of the average module duration, plus a visit charge component (where applicable). The SFI charge components for 2014/15 are set out in Table 1.4, and will subsequently be indexed at +0.2% per year.

Table 1.4: Visit and hourly cost components for each SFI module in 2014/15

| SFI visit component | £52.60 |
| SFI hourly component (per hour) | £52.60 |
Section 2

Introduction

2.1 In this section we set out the scope of this Statement, the regulation currently in place, the process we have adopted in defining the markets in these reviews and the legal framework relating to the market review process.\textsuperscript{13} Developments since the last market reviews are dealt with as appropriate in the relevant sections.

2.2 Under Article 7 of the Framework Directive\textsuperscript{14}, National Regulatory Authorities (‘NRAs’) are required to notify their draft statement (comprising the draft measure and the reasoning on which the measure is based) to the European Commission, BEREC and other NRAs upon completion of their own domestic consultation and having taken account of all stakeholder responses. The European Commission, BEREC and other NRAs may make comments within a month. The notifying NRA needs to take utmost account of any European Commission and BEREC opinions.

2.3 Therefore, having taken account of consultation responses (submitted as part of the domestic consultation) and having made modifications that appear appropriate to us in light of these comments, we are notifying our draft measures and an explanatory Statement setting out the reasoning on which the measure is based to the European Commission, BEREC and the regulatory authorities in every other member state under section 48B of the Communications Act 2003 (‘the CA03’) (which transposes Article 7). This draft Statement comprises that notification.

Scope of this review

2.4 Under the European common regulatory framework for electronic communications (‘CRF’)\textsuperscript{15}, Ofcom is required to carry out periodic reviews of electronic communications markets in the United Kingdom (‘UK’). This consultation considers the level of competition and, consequently, the regulation that should apply for the next three years in the following fixed access markets:

- **Wholesale local access (‘WLA’):** the connection from the local exchange/access node to the end-user. It is needed to support fixed line services such as voice calls and broadband internet access;

- **Fixed analogue exchange lines:** analogue exchange lines provide a narrowband connection (typically a single 64kbit/s channel) from a customer’s premises to a local aggregation point (e.g. local exchange) in the access network. These lines

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\textsuperscript{13} Further detail on the legal framework is set out in Annex 1.


provide consumers with the capability to consume narrowband services in the form of voice calls, facsimile and dial-up internet access;

- **ISDN2 exchange lines**: a digital telephone lines service that provides up to 2 lines over a common digital bearer circuit. These lines support a wide range of services including basic telephony with features additional to those available on analogue exchange lines and data services; and

- **ISDN30 exchange lines**: as for ISDN2, but with the provision of up to 30 lines.

2.5 We are also, at the same time as carrying out this review, carrying out a review of the Wholesale Broadband Access (‘WBA’) market and a review of regulatory financial reporting. Our conclusions for both these reviews have been published at the same time as this Statement (respectively, the ‘2014 WBA Statement’\(^{16}\) and the ‘2014 Regulatory Financial Reporting Statement’).\(^{17}\)

2.6 Finally, we have decided to consult further on our proposals for addressing the margin set by British Telecommunications (‘BT’) for Virtual Unbundled Local Access (‘VULA’) (‘the 2014 VULA Margin Consultation’), and so this Statement does not cover our position on remedies dealing with this issue. We intend to publish this shortly and expect to conclude on this later this year.

**Findings of the last market reviews**

2.7 Table 2.1 summarises the last market and significant market power (‘SMP’) assessments and current remedies in place:


<table>
<thead>
<tr>
<th>Market</th>
<th>Was there SMP?</th>
<th>Remedies/obligations imposed</th>
</tr>
</thead>
</table>
| WLA                                        | BT has SMP in UK excluding the Hull Area KCOM has SMP in Hull Area | BT:  
• Local Loop Unbundling including charge control  
• VULA  
• Sub Loop Unbundling  
• Physical Infrastructure Access  
• General remedies  
KCOM: General remedies |
| Wholesale Fixed Analogue Exchange Lines    | BT has SMP in UK excluding the Hull Area KCOM has SMP in Hull Area | BT:  
• Wholesale Line Rental including charge control  
• General remedies  
KCOM: General remedies |
| Wholesale ISDN30                          | BT has SMP in UK excluding the Hull Area KCOM has SMP in Hull Area | BT:  
• Wholesale Line Rental including charge control  
• General remedies  
KCOM: General remedies |
| Wholesale ISDN2                           | BT has SMP in UK excluding the Hull Area KCOM has SMP in the Hull Area | BT:  
• Wholesale Line Rental  
• General remedies  
KCOM: General remedies |
| Retail ISDN2                               | BT has SMP in UK excluding the Hull Area KCOM has SMP in the Hull Area | BT: Wholesale remedies considered adequate  
KCOM: No undue discrimination obligation and price publication |
| Various other retail markets in the Hull Area | KCOM has SMP in retail fixed analogue exchange lines, retail ISDN30 | KCOM: No undue discrimination obligation and price publication |

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22 Ibid.  
This market review

2.8 In the course of this review, we published the following consultation documents:

- Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - Call for inputs, 9 November 2012 (‘the 2012 FAMR Call for Inputs’);

- Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - Consultation on the proposed markets, market power determinations and remedies, 3 July 2013 (‘the July 2013 FAMR Consultation’);

- Fixed access market reviews: approach to setting LLU and WLR charge controls, 11 July 2013 (‘the July 2013 LLU WLR Consultation’);

- Regulatory financial reporting: a review, 6 September 2013 (‘the 2013 Regulatory Financial Reporting Consultation’);

- Fixed access market reviews: Openreach quality of service and approach to setting LLU and WLR charge controls, 19 December 2013 (‘the December 2013 LLU WLR Consultation’), and

- Fixed access market reviews: Further consultation on notification periods, compliance with requirements on the VULA margin, and approach to pricing for TRCs and SFIs, 16 January 2014 (‘the January 2014 FAMR Consultation’).

2.9 Our analysis in this Statement is based on stakeholder responses to the Call for Inputs and these consultations, along with the information we routinely collect on these markets while carrying out our duties, discussions with industry stakeholders, data supplied by communication providers (‘CPs’) in response to statutory information requests, and publicly available information (including material from investor presentations and analysts’ reports).

Regulatory framework

2.10 The common regulatory framework has its basis in five EU Communications Directives, each of which has been implemented into UK law by, in the majority of cases, the CA03. These impose a number of obligations on relevant NRAs, such as Ofcom, one of which is to carry out periodic reviews of certain electronic communications markets.

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24 Ofcom, Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 – Call for Inputs, 9 November 2012, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-markets/summary/condoc.pdf.

25 http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/summary/fixed-access-markets.pdf.


30 A full list of respondents to the consultations and a list of sources of evidence that we have used in developing these remedies can be found in Annex 32 – Sources of Evidence.
communications markets. The CA03 also sets out Ofcom’s duties, such as our principal duty which is to further the interests of citizens in relation to communications matters and the interest of consumers in relevant markets, where appropriate by promoting competition.

2.11 We set out the market review process, and the regulatory framework, in more detail in Annex 1, but the following summarises what the market review process involves.

The market review process

2.12 In this document we assess the extent of competition in order to determine whether or not regulatory intervention is appropriate. The review is carried out in three stages:

- we first identify and define the relevant products and services, and the appropriate geographic areas within which those products and services should be considered so as to define the relevant economic markets for our analysis;
- we then assess whether the markets are effectively competitive, which involves assessing whether any operator has SMP in any of the relevant markets; and
- finally, we assess the appropriate remedies which should be imposed where there has been a finding of SMP, based on the nature of the competition problem identified in the relevant markets.

Overall approach – the preference for intervening upstream

2.13 Figure 2.1 illustrates how regulation at the different levels of the market can, when there would otherwise be a single vertically integrated supplier, produce a downstream competitive market.

Figure 2.1: Illustrative example of the impact of regulating local access and intermediate wholesale products

2.14 Where possible, our approach has historically been to intervene upstream in order to facilitate competitive downstream markets. Without regulatory intervention, it is likely that a vertically integrated supplier of a local access network would both run the network and supply all the services to retail consumers. In which case, products and services would only be bought and sold at the downstream, retail level.
2.15 In this scenario, if we were to analyse the retail level, we would likely find that the supplier holds a position of SMP and it would therefore be necessary to determine what appropriate remedies should be imposed on the supplier, such as setting retail price controls which would protect consumers from adverse pricing effects (such as excessively high prices). However, while retail price controls can protect consumers, they do not put any pressure on the dominant supplier to improve service quality and innovate, as would be the case where it faces competition from other suppliers providing retail products and services.

2.16 The fact that this supplier monopolises the whole value chain may be the result of the dominant supplier maintaining control over certain parts of the value chain that are difficult to replicate, most notably its local access network. As a result, other providers are unable to enter other parts of the value chain which could potentially support competition.

2.17 As such, an appropriate remedy might be to require the dominant supplier to provide ‘wholesale’ access to certain elements in the value chain in order to allow other providers to use these elements to compete downstream. For example, we currently require BT to provide various WLA services such as Local Loop Unbundling (‘LLU’) (for copper-based current generation access (‘CGA’) services) and VULA (for fibre-based next generation access (‘NGA’) services) on regulated terms. This allows other CPs to use BT’s access network to provide competing voice and broadband services in the downstream markets.

2.18 However, there are certain circumstances where competition based on WLA remedies is not effective, such as in more rural areas where LLU is not viable and is therefore not effective, or when supplying less profitable services, such as voice only. As a result, it is necessary for us to also intervene further downstream, for example by requiring access at an intermediate level (e.g. to pre-made/aggregated wholesale products such as WBA or Wholesale Line Rental (‘WLR’).

2.19 As such, our approach to these reviews, consistent with the approach in the EC regulatory framework (and our approach in previous reviews), can be summarised as follows. Having identified that, absent regulation, SMP exists at the retail level, we look to impose access remedies at an upstream level to facilitate greater competition. We do this at the most upstream level that we believe will result in effective and sustainable competition – this level is the WLA market. We then look to see if these upstream access remedies have indeed resulted in effective and sustainable competition. Where they have, we do not need to regulate further. However, where they have not, we need to consider further regulation downstream of the WLA level. Specifically, this Statement considers the wholesale provision of ISDN2, ISDN30 and analogue exchange lines, while the 2014 WBA Statement considers WBA. We also consider various other wholesale narrowband markets (e.g. wholesale fixed call origination) in the 2013 Narrowband Statement (Ofcom, Review of the fixed narrowband services markets - statement, 26 September 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/nmr-2013/statement/Final_Statement.pdf).

2.20 Note that, while we define a number of markets at different levels in the supply chain, the ‘markets’ that we observe today at the wholesale level exist as a result of our previous regulatory interventions. It is likely that without existing SMP regulation in
the markets, we would expect BT and Virgin Media (‘Virgin’) to be the only two communications providers supplying fixed line services in the UK, with BT effectively the monopoly supplier to half of the country.32

**Relevant documents**

2.21 We are required to take account of various European Union (‘EU’) instruments when carrying out our analysis and assessment of markets, SMP and remedies in a market review.

2.22 In particular, we are obliged to define relevant markets “appropriate to national circumstances…in accordance with the principles of competition law”.33 In so doing, we are also obliged to take “utmost account” of the European Commission’s (‘EC’) Recommendation on relevant product and service markets34 (the ‘Relevant Markets Recommendation’) and the EC SMP Guidelines.35

2.23 On remedies, we are required to take utmost account of Recommendations issued by the EC under Article 19(1) of the Framework Directive, including the EC’s NGA Recommendation on regulated access to next generation networks (‘the NGA Recommendation’)36 and the EC’s recommendation on costing and non-discrimination (‘the Costing and Non-discrimination Recommendation’).37 We are similarly obliged to take utmost account of any opinion, recommendation, guidelines, advice or regulatory best practice adopted by the Body of European Regulators for Electronic Communications (‘BEREC’), including the Common Position on best practice in remedies in the WLA market (‘the BEREC Common Position’).38

2.24 In general, in the relevant sections in this Statement we note, in general terms where we are consistent with the EC and BEREC (with some exceptions where we are more specific than the context requires), and only comment in detail where we

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32 Except for the Hull Area where KCOM would be the monopoly supplier.
38 BoR (12) 127, BEREC. BEREC common position on best practice in remedies on the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location imposed as a consequence of a position of significant market power in the relevant market, 8 December 2012, www.berec.europa.eu/files/document_register_store/2012/12/20121208163628_BoR (12) 127_BEREC_COM MON_POSITION_ON_BEST_PRACTICE_IN_REMEDIES_ON_THE_MARKET_FOR_WHOLESALE.pdf.
propose to depart from the recommendations, opinions and common practices set out by those bodies.

The Relevant Markets Recommendation and its application to this review

2.25 The Relevant Markets Recommendation sets out product and service markets which, at European level, the EC has identified as being susceptible to *ex ante* regulation. These markets are identified on the basis of the cumulative application of three criteria:

- the presence of high and non-transitory barriers to entry;
- a market structure which does not tend towards effective competition within the relevant time horizon; and
- the insufficiency of competition law alone to adequately address the market failure(s) identified.

2.26 The requirement to define relevant markets appropriate to national circumstances means we are free to identify relevant markets in the UK as susceptible to regulation other than those in the Relevant Markets Recommendation. However, where we do so, the Relevant Markets Recommendation requires that for each relevant market we must show that the cumulative criteria are satisfied.

2.27 The markets in this review that are not listed in the Relevant Markets Recommendation are:

- fixed analogue exchange lines;
- ISDN30; and
- ISDN2.

2.28 In the relevant sections below in this Statement, we set out our assessment of each of the cumulative criteria for each of the relevant markets we identify which are not listed in the Relevant Markets Recommendation.

The EC SMP Guidelines and their application to this review

2.29 The EC SMP Guidelines include guidance on market definition, assessment of SMP and SMP designation. In the relevant sections in this Statement, we set out how we have taken the EC SMP Guidelines into account in reaching final positions.

The NGA Recommendation and the Costing and Non-discrimination Recommendation

2.30 The NGA Recommendation aims to foster the development of the single market by enhancing legal certainty and promoting investment, competition and innovation in the market for broadband services, in particular the transition to next generation access networks. It does so by setting out a common approach for promoting the consistent implementation of remedies with regard to such networks.

2.31 The Costing and Non-discrimination Recommendation concerns the application of non-discrimination, price control, cost accounting obligations and sets out a common approach for NRAs for promoting their consistent and effective implementation. It
provides further guidance on the regulatory principles established by the NGA Recommendation, in particular the conditions under which regulation of wholesale access prices should or should not be applied.

2.32 In relation to both of these documents, we note that we must take utmost account of each recommendation, but that in light of particular factors it may be appropriate to depart for any such reason.

BEREC Common Position

2.33 In considering the remedies we have imposed, insofar as they apply to each of the wholesale local access markets in the UK excluding the Hull Area, and the Hull Area, we have taken utmost account of the BEREC Common Position on remedies in the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location imposed as a consequence of a position of significant market power in the relevant market, as set out in the sections below. Again, to the extent that any of decisions are not consistent with the BEREC Common Position, we have set out our reasons.

Forward look

2.34 Market reviews look ahead to how competitive conditions may change in future. For this review, we have taken a forward look of three years, reflecting the characteristics of the retail and wholesale markets and the factors likely to influence their competitive development. The forward look period also reflects the requirement in the EC Directives that ordinarily market reviews should be conducted within three years of the previous review.

2.35 This does not preclude us from reviewing any of the markets earlier, but absent unforeseen developments we anticipate that we would time the next market review to conclude three years after the completion of the current review. We therefore consider that the remedies we impose in this Statement are appropriate for the next three years.

Impact Assessment and Equality Impact Assessment framework

Impact Assessment

2.36 The analysis presented in the various consultation documents set out above constituted an impact assessment as defined in section 7 of the CA03. This Statement sets out the corresponding decisions having taken all representations into account.

2.37 Impact assessments provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making. This is reflected in section 7 of the CA03, which sets out that we have to carry out impact assessments where the remedies we impose proposals would be likely to have a significant effect on businesses or the general public, or when there is a major change in Ofcom’s activities. However, as a matter of policy Ofcom is committed to carrying out impact assessments in relation to the great majority of our policy decisions. For further information about our approach to impact
assessments, see our guidelines, “Better policy-making: Ofcom’s approach to impact assessment”.39

**Equality Impact Assessment (‘EIA’)**

2.38 Annex 2 sets out our EIA for this market review. Ofcom is required by statute to assess the potential impact of all our functions, policies, projects and practices on race, disability and gender equality. EIAs also assist us in making sure that we are meeting our principle duty of furthering the interests of citizens and consumers regardless of their background or identity.

2.39 In summary, it is not apparent to us that the outcome of our review is likely to have any particular impact on race, disability and gender equality. Specifically, we do not envisage the impact of any outcome to be to the detriment of any group of society. Nor do we consider it necessary to carry out separate EIAs in relation to race or gender equality or equality schemes under the Northern Ireland and Disability Equality Schemes.40

**Document structure**

2.40 The Statement is comprised of two volumes. Volume 1 sets out our analysis of the markets, assessment of SMP and the remedies we intend to impose, while Volume 2 sets out in detail our approach to setting the LLU and WLR charge controls.

2.41 The Statement is therefore set out as follows:

- **Volume 1:**
  - Sections 3 to 7 cover market definition and assessment of SMP for each of the markets under review;
  - Section 8 covers our approach to remedies;
  - Section 9 summarises our approach to the quality of service issues under review;
  - Section 10 covers general remedies applicable to each of the markets under review, including relevant quality of service obligations;
  - Section 11 covers the remainder of remedies aimed at addressing quality of service;
  - Sections 12 to 14 cover our assessment of specific remedies for the WLA market;
  - Section 15 covers our assessment of specific remedies for the Wholesale Fixed Analogue Exchange Lines (‘WFAEL’) market;


40 No stakeholders commented on our proposed EIA.
Section 16 summarises our decisions on the structure and level of the charge controls for WLA and WFAEL;

Section 17 covers our assessment of specific remedies for the ISDN30 and ISDN2 markets;

Section 18 covers our approach to the charge control for Time Related Charges (‘TRCs’) and Special Fault Investigations (‘SFIs’); and

Section 19 sets out the charge control conditions, along with the legal tests to which we have had regard; and

Volume 2:

Section 1 provides a summary of our approach (as set out in Section 16 of Volume 1);

Section 2 covers the background to our approach;

Section 3 covers the economic and regulatory background to the setting of cost-based charges for LLU and WLR;

Section 4 covers charge control design, including basket structure and the introduction of new controls;

Section 5 covers charge control cost modelling for the LLU and WLR charge controls, including noting the key inputs and impacts on the charge controls of the outcome of our review of Openreach’s quality of service, service level cost differentials and fault rates; and

Section 6 covers the speed of adjustment of charges, including our approach to glide paths and moving the differential between the WLR+Shared Metallic Path Facility (‘SMPF’) and Metallic Path Facility (‘MPF’) charges to the difference in long run incremental costs between the services.

2.42 Finally, the annexes are as follows:

• Annex 1: Regulatory framework
• Annex 2: Equality Impact Assessment
• Annex 3: Approach to market definition and SMP assessment
• Annex 4: TRC/SFI ordering steps and processes
• Annex 5: TRCs and SFIs cost accounting template
• Annex 6: Copper and duct valuation (Regulatory Asset Value)
• Annex 7: BT RAV model
• Annex 8: Cost modelling for simultaneously provided services
• Annex 9: Estimation of LRIC differentials
• Annex 10: Technical requirements of migrations
• Annex 11: Cost model documentation
• Annex 12: Cost model
• Annex 13: Detailed cost modelling assumptions
• Annex 14: Cost of capital
• Annex 15: Brattle Group report: Estimate of BT’s equity beta
• Annex 16: Efficiency
• Annex 17: Service quality modelling
• Annex 18: Analysys Mason comments on quality of service model consultation responses
• Annex 19: Service Level cost differentials
• Annex 20: Fault rates
• Annex 21: Cartesian updated fault rates report
• Annex 22: Choice of base year data for cost modelling
• Annex 23: Correspondence on base year data
• Annex 24: Volumes forecasting
• Annex 25: Volumes forecasting model
• Annex 26: Treatment of cumulo rates within the charge control
• Annex 27: Single jumpered MPF
• Annex 28: Cost model results and sensitivities
• Annex 29: Proposed Legal Instruments
• Annex 30: Quality of service: Current performance, impact of poor delivery, and establishing a reasonable level of performance
• Annex 31: Quality of service: Analysis of recent Openreach performance
• Annex 32: Sources of evidence
• Annex 33: Glossary
Section 3

Market definition and SMP analysis: Wholesale Fixed Analogue Exchange Lines

Introduction

3.1 In this section we consider market definition and market power analysis in relation to WFAEL services. The reasoning for carrying out a market definition and market power assessment, including our general approach to doing so, is set out in Annex 3. In approaching our assessment of market definition for the WFAEL market, we have taken utmost account of the guidance on market definition in the EC SMP Guidelines.

3.2 Wholesale fixed analogue exchange lines are intermediate products that are sold to CPs to enable them to provide a telephone connection (typically a single 64 kbit/s channel) from a customer’s premises to a local aggregation point (e.g. local exchange) in the access network. This connection provides consumers with the capability to consume other telephony services in the form of telephone calls (and historically facsimile and dial-up internet access). The demand for wholesale fixed analogue exchange lines is therefore derived from demand by retail consumers for fixed narrowband analogue access.

3.3 We define the relevant product market as the market for the provision of wholesale fixed analogue exchange lines. This market includes the provision by means of copper access, cable access, MPF LLU or fibre-to-the-premises (‘FTTP’) deployments offering a narrowband voice service using an analogue terminal adaptor (‘ATA’).

3.4 We also conclude that there are two separate WFAEL markets in the UK distinguished by geographic area and that there is an SMP operator in each. In particular, we conclude that:

- BT has SMP in the wholesale fixed analogue exchange lines market in the UK excluding the Hull Area; and

- KCOM Group (‘KCOM’) has SMP in the wholesale fixed analogue exchange lines market in the Hull Area.

3.5 We have previously published a statement setting out our decisions for wholesale call origination as part of our 2013 Narrowband Market Review. There are close links between the markets for wholesale call origination and for WFAEL – at the retail level any customer making a fixed voice call will also need a fixed analogue exchange line. We therefore draw on our analysis of wholesale call origination where

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41 We also refer to this market in this section as the wholesale fixed analogue exchange lines market (or WFAEL market) for short.

relevant for our assessment of market definition and SMP in WFAEL, taking into account stakeholder responses to the 2013 Narrowband Consultation.

**Section structure**

3.6 This section is structured as follows:

- definition of the relevant product and geographic markets (including the application of the three-criteria test to these markets); and
- assessment of market power.

3.7 For each of these, we set out a summary of the proposals in the July 2013 FAMR Consultation, responses received from stakeholders, and our final analysis in light of those responses.

**Market definition**

**Provisional conclusion on market definition as set out in the July 2013 FAMR Consultation**

3.8 We proposed defining a product market for wholesale fixed analogue exchange lines, which includes analogue exchange lines delivered in the following ways:

- copper access;
- cable access;
- MPF LLU; and
- FTTP deployments offering a narrowband voice service using an ATA.

3.9 We also proposed two geographic markets:

- the UK excluding the Hull Area; and
- the Hull Area.

**Stakeholder responses to the July 2013 FAMR Consultation**

3.10 The Federation of Communication Services (‘FCS’), TalkTalk Group (‘TalkTalk’), and Verizon UK (‘Verizon’) were in overall agreement with Ofcom’s analysis of the

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WFAEL product and geographic market, and BT\textsuperscript{46} stated that it did not see a strong case to fundamentally redefine existing WFAEL market definitions at this point.\textsuperscript{47} Verizon\textsuperscript{48} also noted that Voice over Internet Protocol (‘VoIP’) was currently not a mass market alternative to the copper network, and so agreed that VoIP should not be included in the market definition of WFAEL.

Our analysis and conclusions

3.11 We consider the market definition for WFAELs by broadly adopting the methodological approach described in Annex 3 (consistent with the Relevant Markets Recommendation). This involves first defining the relevant product market (taking into account stakeholder responses to the July 2013 FAMR Consultation where relevant) and then, given this finding, considering the issue of geographic market definition (also taking into account stakeholder responses).

3.12 As set out in Annex 3 (and consistent with the Relevant Markets Recommendation), in considering the wholesale market definition it is important to consider the relevant retail services (and retail substitution). This is because the demand for the upstream wholesale service is a derived demand – i.e. the level of demand for the upstream input depends on the demand for the retail service. We therefore consider that in determining the boundaries of the relevant wholesale product market, the extent of indirect constraints due to (demand-side) substitution at the retail level is relevant. In particular, an increase in the price of WFAEL is likely to increase the downstream price of the services supplied using that input, which could lead final consumers to switch thereby reducing the demand for the wholesale input being considered. As such, we present our analysis of the retail market in the context of considering indirect constraints in the WFAEL market. Consistent with the Relevant Markets Recommendation, we have considered the relevant retail analysis from a forward looking perspective in the absence of regulation.

3.13 In conducting our analysis, we have regard to the fact that the relevant market for WFAELs appears to be relatively well-established. It was assessed in detail in both the 2009 Wholesale Narrowband Statement\textsuperscript{49} and the 2010 WFAEL Statement\textsuperscript{50}, where we reached the same definition on both occasions. The market for WFAELs was then considered again in our 2012 LLU WLR Charge Control Statement\textsuperscript{51}, where we concluded there had been no material change that would cause us to revise this definition. Responses to the 2012 FAMR Call for Inputs indicated that stakeholders generally agreed that the market definition set out in these documents continues to remain appropriate. As a result, we do not consider it necessary to begin our market definition exercise from first principles. Instead, we take as our starting point the relevant markets we defined in the 2010 WFAEL Statement (and in relation to which

\textsuperscript{46} Paragraph 124, BT response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.

\textsuperscript{47} BT also noted a number of market developments which it considered will be increasingly important in future market reviews, which are summarised below in relation to the market power assessment.


we determined in the 2012 LLU WLR Charge Control Statement that there had been no material change since Ofcom’s previous market power determinations) and assess whether there have been any material changes since this time that would cause us to revise this definition. We therefore begin our analysis of product market definition by summarising our conclusions in the 2010 WFAEL Statement.

Product market

Product market definition in the 2010 WFAEL Statement

3.14 In the 2010 WFAEL Statement we defined the relevant product market as the market for the supply of wholesale fixed analogue exchange lines. This definition included fixed analogue exchange lines provided over alternative fixed networks (including cable and MPF LLU) as well as narrowband analogue exchange line services provided over a NGA network using an ATA adaptor (e.g. BT’s FTTP). This definition also included wholesale services used to supply both residential and business customers with analogue exchange lines. It excluded digital exchange lines (ISDN2 and ISDN30) and access provided over mobile and broadband networks.

3.15 In reaching this product market definition, we first considered the relevant markets for analogue exchange lines at the retail level, noting that demand at the wholesale level is derived from retail level demand. We concluded that mobile access was not a sufficiently strong constraint on fixed analogue access to be included in the same relevant market. This was because the majority of consumers continued to buy both fixed and mobile access and, while we expected to see some increase in the proportion of mobile-only households within the review period, we considered the case for many business and residential users to retain fixed access was likely to remain strong. We excluded ISDN2 and ISDN30 from the retail market on the basis that differences in price and technical characteristics meant they were unlikely to present an effective demand- or supply-side substitute to analogue exchange lines.

3.16 We included analogue exchange lines provided over alternative fixed networks on the grounds that consumers viewed different types of fixed narrowband analogue access as substitutable for one another, regardless of the underlying technology used. We defined separate product markets for business and residential users of analogue exchange lines at the retail level, although we considered the two to be closely linked. We recognised that BT had revised and simplified its business tariffs, closing the differential between business and residential pricing and making comparisons between the two types of package easier to make. However, we considered that supply-side substitution was limited by the costs associated with marketing multiple services, noting that business and residential services were targeted at different segments by different types of CP.

3.17 In assessing the relevant wholesale market, we considered both indirect and direct constraints from potential alternatives. We found that the indirect constraint from mobile was not sufficiently strong to include it in the same wholesale market because customer switching between the two was likely to be limited in response to relative price changes at the retail level. We did not consider mobile and fixed access to be direct substitutes at the wholesale level, as we considered that their limited substitutability at the retail level meant it was unlikely that CPs would view mobile access as an attractive alternative in the event of an increase in the price of wholesale fixed access. We considered the direct constraint from alternative fixed networks was also likely to be limited because LLU operators using MPF did not wholesale to third parties and we considered it unlikely that there would be entry based on investment in new infrastructure. However, we considered that the indirect
constraint from alternative fixed networks was sufficiently strong to include wholesale fixed analogue exchange lines over these networks in the same market. This was because we considered that an increase in the wholesale price was likely to be passed on in full to the retail level and our consumer survey suggested that a significant proportion of customers would switch provider in response to a small but significant price change.

3.18 We also considered the potential for direct substitution between business and residential services at the wholesale level. We found the key differentiating factor was the level of service and associated products provided alongside the access product, and therefore considered the direct constraint between analogue exchange lines for business and residential use was sufficiently strong at the wholesale level to define a single market encompassing both.

3.19 In considering how future developments might affect these definitions, we noted that NGA network deployments were unlikely to affect our market definition within the period of the review as the planned upgrades were intended to support higher speed broadband services and did not affect narrowband services. However, we recognised that narrowband analogue exchange line services could be provided over an NGA network using an ATA adaptor, and included these services within our market definition on the grounds that the service presented to the end-user would be broadly the same. We also excluded broadband access and calls (e.g. VoIP) on the grounds that, while VoIP usage was likely to increase, nearly all customers buying broadband access also bought narrowband access, and the economics of providing a broadband-only product were such that take-up of these offers was likely to remain very low.

Market background

3.20 Analogue exchange lines are the most common type of access provided to residential and small business premises in the UK and are delivered in the following ways:

- in the UK excluding the Hull Area, BT provides analogue exchange lines via its copper access network. This network is also used to deliver broadband services and has nearly 100% coverage of the UK excluding the Hull Area (the exception being a small number of new build premises which are supplied with access to narrowband voice services using FTTP – see below);

- in the Hull Area, KCOM provides analogue exchange lines via its copper access network. As with BT, the KCOM network is also used to deliver broadband services;

- in areas where Virgin has deployed its cable network, Virgin delivers analogue exchange lines using this network by selling directly to end-users. This service is delivered via a connection between a customer’s premises and a street cabinet using a Siamese cable, which contains a coaxial cable and a twisted copper pair – the coaxial cable is used to support TV and broadband whereas the twisted copper pair is used to support standard telephony. Virgin then uses fibre rings to
connect the street cabinets to the ‘head-end’ hub site. Virgin’s cable network is available to approximately 48% of UK premises\textsuperscript{52}; and

- in areas where MPF LLU is in use, other CPs take over BT’s copper loops and can provide analogue exchange lines directly to consumers who are prepared to buy voice and broadband access together (i.e. a dual-play offer). Approximately 94% of premises in the UK are connected to an exchange that has been unbundled and MPF lines now account for approximately 70% of all external LLU lines (i.e. those used by CPs other than BT).\textsuperscript{53}

3.21 In some limited instances (notably new build developments), BT has built out its network to the customer’s premises using FTTP deployments without copper lines. As in our approach to market definition in the last WFAEL review, we include these services within our candidate market where they involve a narrowband voice service using an ATA. This is because while the underlying technology would be different to the copper network, the service presented to the end-user would be broadly the same.

**Direct constraints**

3.22 A direct constraint arises when the wholesale price is constrained by the possibility of direct switching to a potential alternative at the wholesale level. For example, if CPs were able to use VoIP over a broadband connection instead of fixed voice services over an analogue line, then broadband access may provide a direct constraint on the wholesale price of WFAELs. We now consider here whether broadband access could provide such a constraint.

**VoIP and broadband access**

3.23 In theory, it is possible for CPs to provide their retail customers with voice services over a broadband line instead of a fixed narrowband line by making use of VoIP technology. Indeed, a number of CPs do already offer voice calls over broadband in this way. Use of VoIP has increased significantly since the last review, suggesting that VoIP calls may present an alternative to fixed voice calls for some customers (as argued by BT in its response to the July 2013 FAMR Consultation). Nonetheless, we consider the potential for CPs to switch from providing narrowband access to offering VoIP calls over broadband to be relatively limited in the period covered by this review.

3.24 Fixed broadband access requires a fixed local access connection in the same way that fixed analogue exchange lines do. Indeed, for both BT’s and Virgin’s networks, broadband and analogue voice calls share the same physical network. Therefore, while it is possible to make calls over broadband access using VoIP, it does not remove the need to have a fixed connection. As residential customers typically have only one fixed analogue line, we consider it is unlikely that a CP could achieve

\textsuperscript{52} As at June 2013. Figure 1.2, Ofcom, *Communications Market Report 2013*, 1 August 2013, http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr13/2013_UK_CMR.pdf.

significant cost savings in this review period by providing VoIP over broadband access without also providing narrowband access, regardless of whether they use their own infrastructure or make use of a wholesale input.\footnote{This is because fixed broadband access requires a fixed local access connection in the same way that WFAELs do, and so VoIP does not remove the need to have a fixed connection (e.g. the fixed connection is included in both SMPF-based broadband provision (via the WLR charge, as both are required for a single customer) and MPF-based broadband provision, irrespective of whether voice access is provided alongside broadband or not). Therefore, we consider the incremental cost of adding narrowband access (i.e. to allow the consumer to make and receive calls) to the fixed access connection is likely to be quite low.}

3.25 We recognise the situation may be different where CPs are supplying users (typically from the business sector) with multiple fixed lines. Only one line is required to support a broadband connection, and so a CP in this situation could remove all additional lines and supply voice services using VoIP over the broadband connection. We also recognise that some business users receive VoIP services over an alternative form of IP-based access that does not require a fixed analogue line (e.g. Session Initiation Protocol (‘SIP’) trunking over leased lines). However, it is unclear the extent to which a CP would be able to switch customers to these alternatives without their agreement and the need for different end-user equipment. As a result, we consider the potential for this substitution in relation to indirect demand constraints.

**Indirect demand constraints from competition at the retail level**

3.26 Indirect demand constraints arise when an increase in price at the wholesale level is passed on to the retail price and induces switching to alternatives as a result. Indirect demand constraints may often be more important than direct demand constraints in constraining wholesale prices in telecom markets. We therefore consider below whether retail customers would switch away from fixed narrowband access and use potential alternatives in response to an increase in the price of WFAELs. The alternatives we consider are:

- mobile access;
- VoIP and broadband access; and
- digital access (ISDN2 and ISDN30).

3.27 We now assess each in turn by considering the extent of demand side substitutability by retail consumers (on a forward looking basis), and determining whether retail switching is likely to exert a sufficient indirect competitive constraint such that it should be included in the wholesale market definition. We recognise that the strength of any indirect demand constraint could vary between residential and business services, as well as between other types of retail customer, and accordingly take this into account in our assessment.
Indirect demand constraint – competition based on mobile

Residential consumers

3.28 While we are aware that many customers now view mobile calls as a substitute for fixed telephony, the evidence we have seen both from the consumer survey we conducted for the 2013 Narrowband Market Review and actual consumer behaviour suggests that residential consumers retain a high degree of attachment to their fixed line.

3.29 In relation to actual consumer behaviour, some households are mobile-only (as noted by BT in its response to the July 2013 FAMR Consultation). However, households with both mobiles and fixed lines continue to be the most common (over 80% of households in 2012/13), with the proportion of mobile-only households having slowly declined in the last three years to approximately 11% in 2012/13. This suggests that consumers continue to value access to both fixed and mobile services, i.e. that most consumers regard the two products as serving different needs rather than being close substitutes.

3.30 Table 3.1 illustrates monthly line rental prices for the major CPs, which in 2012 were between £12.25/month and £14.60/month. The table shows that these prices represented an increase for these CPs by between 5% and 10% from 2011, and it is interesting to note that, rather than demand falling in response to these price increases, the number of residential fixed voice lines has actually increased from 23.9 million in 2011 to 24.4 million in 2012 (and indeed the number of mobile-only households declined slightly). We note that further price increases have also occurred each year since, and the number of residential fixed voice lines was also higher in 2013 than it had been in 2012. During the same time there has been an increasing move towards providing bundles of free inclusive minutes with line rental,

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55 In 2011, mobile calls accounted for more than half of all voice call minutes for the first time with 52% of calls being mobile originated, continuing in 2012 when 54% of voice call minutes were mobile originated. At the same time, there appears to have been a continued convergence in average prices resulting in the average cost of fixed voice calls exceeding mobile in 2011 for the first time (8.5ppm for mobile and 8.6ppm for fixed), with an increased difference in 2012 (8.6ppm for mobile and 9.1ppm for fixed) – see Figures 5.24 and 5.53 of Ofcom, Communication Market Report 2013, 1 August 2013, http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmrmr13/2013_UK_CMR.pdf. These trends suggest that many consumers are likely to consider mobile calls a substitute for at least some fixed voice calls. (Note, while this price data is useful for general trends, it should be interpreted with caution as it is an approximate measure of average retail call prices only (see footnote 162 of Ofcom, Review of the fixed narrowband services markets – statement, 26 September 2013 http://stakeholders.ofcom.org.uk/binaries/consultations/nmr-2013/statement/Final_Statement.pdf for further explanation). The consumer survey we conducted for the 2013 Narrowband Consultation suggested this is indeed the case, with nearly half of all respondents saying they make calls from a mobile that could have been made from a landline (46%) and a similar proportion agreeing with the statement “I have a landline but generally use mobile” (47%). See P.24, Jigsaw Research, Report for the 2013 Narrowband Market Review, January 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/nmr-2013/annexes/JR-report.pdf.


57 Note, this figure excludes those respondents (in the Communication Market Report survey data) that claim not to have a landline but who also claim to have access to fixed broadband, as we believe these are not truly mobile-only households (given a fixed line is required for a broadband connection). This issue is discussed further in Annex 24 where we discuss volume forecasting.

58 Figure 5.31, Ofcom, Communication Market Report 2013, 1 August 2013, http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmrmr13/2013_UK_CMR.pdf.
suggesting that average call prices may have fallen for heavy landline users. We recognise there may have been simultaneous changes in the price of mobile access (or other factors affecting its relative desirability) which may have affected customer decisions regarding access choice. Nonetheless we consider that this evidence is consistent with residential customers being relatively insensitive to the price of fixed narrowband access.

### Table 3.1: Line rental prices for major CPs

<table>
<thead>
<tr>
<th></th>
<th>Q1 2011</th>
<th>Q1 2012</th>
<th>11/12 variation</th>
<th>Q1 2013</th>
<th>12/13 variation</th>
<th>Q1 2014</th>
<th>13/14 variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT</td>
<td>£13.90</td>
<td>£14.60</td>
<td>+5%</td>
<td>£15.45</td>
<td>+6%</td>
<td>£15.99</td>
<td>+3%</td>
</tr>
<tr>
<td>Virgin</td>
<td>£12.99</td>
<td>£14.04</td>
<td>+8%</td>
<td>£14.99</td>
<td>+7%</td>
<td>£15.99</td>
<td>+7%</td>
</tr>
<tr>
<td>TalkTalk</td>
<td>£12.60</td>
<td>£13.80</td>
<td>+10%</td>
<td>£14.95</td>
<td>+8%</td>
<td>£15.95</td>
<td>+7%</td>
</tr>
<tr>
<td>Sky</td>
<td>£11.25</td>
<td>£12.25</td>
<td>+9%</td>
<td>£14.50</td>
<td>+18%</td>
<td>£15.40</td>
<td>+6%</td>
</tr>
</tbody>
</table>

Source: Credit Suisse analysis market report, 8 December 2011 and CPs’ websites

3.31 The findings from our consumer survey were also consistent with a low degree of price sensitivity, with most respondents (72%) indicating they would never give up their landline. Among these respondents, the most popular reasons for this attitude were:

- the need for a fixed line to support a fixed broadband connection (31%);
- habit, i.e. they “have always had a landline” (31%);
- reliability (29%); and
- the price of landline calls (25%).

3.32 Moreover, we consider it more relevant that, when asked how they would respond to a 10% increase in the price of their monthly landline bill (i.e. across the package of access and calls), only 10% responded that they would give up their fixed line. The vast majority of respondents indicated that they would not be prepared to give up fixed access in response to a price increase of this magnitude. This is consistent with actual recent behaviour as described above.

3.33 We do not consider that the factors cited by residential consumers for their continued attachment to landlines are likely to be affected by an increase in the price of fixed voice access, nor are they likely to change during the course of the period covered by this review. Indeed, we consider that the need for a fixed line to support a fixed broadband connection is likely to mean that the majority of residential consumers will remain very unlikely to become mobile-only in this review period.

3.34 Although broadband internet is available over both fixed and mobile networks, very few consumers appear to consider mobile broadband as a substitute for fixed broadband. In particular, we note that while accessing the internet on a mobile phone

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59 Some CPs now offer a significant discount on the monthly line rental charge for upfront payment in advance, which is not reflected here.


61 This group comprises those who cited the price of calls, the price of calls to landlines and the price of international calls.
has continued to grow and mobile broadband\(^6^2\) uptake has fluctuated, mobile broadband is almost always used alongside (rather than in place of) fixed broadband access. In Q4 2013, only 3% of UK adults relied solely on their mobile phone for home internet access and only 3% of households relied solely on mobile broadband.\(^6^3\) Instead, most households rely solely on a fixed broadband connection (over 90% of those with broadband\(^6^4\)). Although uptake has been increasing and a move to 4G will increase the speeds available following the latest round of spectrum auctions (as noted by BT in its response to the July 2013 FAMR Consultation\(^6^5\)), we consider that this is unlikely to significantly affect the demand for broadband via fixed line access within the time horizon of this review. This is because even if these services were available to – and adopted by – a significant proportion of UK customers within the period of this review, it is unclear that this will significantly affect the general consumer attachment to a fixed line or fixed broadband service, particularly as the expected continued deployment of superfast broadband means it is not clear that the material difference in broadband speeds between fixed and mobile would significantly narrow.

3.35 As a result, while we recognise that mobile calls represent an increasingly close retail substitute for fixed calls for many residential consumers, we consider that mobile access is not a sufficiently strong substitute to fixed narrowband access for the vast majority of these consumers, nor do we believe it will be during the forward looking period covered by this review. Therefore we do not consider that mobile provides sufficient indirect constraint on WFAEL in this review period to justify the inclusion of these services in the relevant wholesale market definition.

### Business customers

3.36 In contrast to the residential sector, the number of fixed voice lines has been steadily falling in the business sector – for example, business public switched telephone network ('PSTN') lines decreased from 6.0 million in 2009 to 5.4 million in 2012\(^6^6\), which may reflect in part further substitution to mobile. However, it is also likely to reflect substitution to other alternatives such as VoIP, and potentially other factors (e.g. there may have been a decrease in the number of businesses during the recession). We note that we are not aware of any significant medium-term trend towards businesses becoming mobile-only (in contrast to VoIP and broadband access, which we discuss subsequently). Moreover, even if all of this reduction in PSTN lines were due to switching to mobile, the rate of fixed-mobile substitution would still be relatively low over the three year period (equivalent to less than 4% per year).

3.37 We recognise the potential for businesses to switch additional PSTN lines to mobile in response to a relative change in the price of fixed and mobile access, which they...
could do while still retaining a single PSTN line to support broadband access. However, our consumer research for the 2013 Narrowband Market review found that very few business users would be prepared to give up their fixed line entirely – 88% of respondents said they would never do so.67 Similarly, when faced with a hypothetical increase in the price of their monthly bill, only 6% of respondents indicated they would give up their fixed line. As we noted in the 2013 Narrowband Statement, there are non-price considerations such as quality and reliability that are likely to limit the extent of switching to mobile access by business customers.68 For example, we understand that many businesses take fixed lines for reasons of security and resilience – such customers are unlikely to be prepared to switch to mobile solutions given potential issues of coverage and network availability.

3.38 As a result, we consider mobile access is unlikely to be a realistic alternative to fixed line access for a material number of business users in this review period.

3.39 Taken together, we consider the potential for switching to mobile access at the retail level across both the residential and business segments is likely to be limited throughout the period covered by this review. Therefore we do not consider that mobile provides sufficient indirect constraint on WFAEL in this review period to justify the inclusion of these services in the relevant wholesale market definition.

*Indirect demand constraint – competition based on VoIP and broadband/IP-based access*

3.40 Although VoIP calls are a potential substitute for fixed voice calls rather than fixed voice access, they are made over a broadband line rather than a narrowband analogue line. This section therefore considers whether broadband access may provide an alternative to fixed line access for a sufficient number of customers to constrain the price of analogue exchange lines.

Residential consumers

3.41 Evidence on attitudes to, and use of, VoIP suggests that VoIP calls are an alternative to at least certain types of fixed voice calls for a growing number of residential consumers. However, we consider that residential switching to VoIP would be unlikely to avoid the cost of narrowband line rental given the current set of retail offers, and therefore would not be used by residential consumers as a response to an increase in the price of fixed line access.

3.42 In considering retail offers, only Virgin appears to offer a broadband-only service.69 Table 3.2 sets out the price for Virgin’s broadband-only service, along with prices for dual-play offers in May 2014. This shows that although Virgin’s broadband-only package was cheaper than its own dual-play offer, it was comparable to the dual-play bundles offered by many of the other major residential CPs. We consider that this is likely to broadly reflect the economics of deploying and operating a fixed access

69 AOL also provided a broadband-only offer using LLU (SMPF). However, unlike Virgin’s customers, AOL’s retail customers still needed to buy the fixed line from BT.
network (as discussed above, we consider the incremental cost of adding narrowband access (i.e. to allow the consumer to make and receive calls) to the fixed access connection is likely to be very low). Indeed, we consider that this is likely to be the reason why most providers do not offer broadband-only services.

Table 3.2: Sample monthly retail prices for lowest cost standard broadband offers from main CPs (May 2014)

<table>
<thead>
<tr>
<th>Broadband only offers</th>
<th>Dual-play offers</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT</td>
<td>£25.99</td>
</tr>
<tr>
<td>EE</td>
<td>£17.40*</td>
</tr>
<tr>
<td>Plusnet</td>
<td>£16.49</td>
</tr>
<tr>
<td>Sky</td>
<td>£25.40</td>
</tr>
<tr>
<td>TalkTalk</td>
<td>£19.45</td>
</tr>
<tr>
<td>Virgin</td>
<td>£25.00</td>
</tr>
<tr>
<td></td>
<td>£31.49</td>
</tr>
</tbody>
</table>

Source: CPs’ websites (May 2014). Based on entry-level dual-play offering (meaning data and call allowances vary). Excludes introductory offers.*Need to be EE mobile customer for this rate, otherwise it is £27.40 per month.

3.43 In light of the above, we do not believe that VoIP and broadband together provide a sufficiently close substitute to narrowband access for the vast majority of residential users. Therefore we do not consider that VoIP provides sufficient indirect constraint on WFAEL in this review period to justify the inclusion of these services in the relevant wholesale market definition.

Business users

3.44 Many businesses are already using VoIP for a significant proportion of voice calls\(^{70}\) and it is likely that some businesses are replacing narrowband lines with IP-based access solutions (e.g. SIP trunking). We note that the number of business fixed lines (excluding broadband) decreased for the fifth consecutive year in 2012\(^{71}\), and the increased use of IP-based services for business telephony was one factor previously identified as likely to have contributed to this in 2012.\(^{72}\)

3.45 There are various ways in which VoIP services may currently be used to supply business users with voice calls. For the purposes of this analysis, these can be grouped into two broad types: those providing VoIP calls over a fixed broadband connection and those offering VoIP calls over an alternative access solution (such as SIP Trunking over leased lines). We consider that VoIP services provided over a broadband connection are most likely to be taken up by the smaller businesses which typically make use of WFAELs, while the alternative IP-based access solutions are more likely to be taken up by the larger businesses typically using digital lines such as ISDN30. However, we recognise this will not always be the case.

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\(^{70}\) For example, 53% of business respondents to our Narrowband consumer survey indicated that they chose VoIP over a landline very often or sometimes, and 23% said they would be open to using VoIP more frequently. Of the applications used over businesses’ wide area network connections, VoIP was used by 45% of businesses in Q1 2012 and ‘PSTN grade’ voice services were used by 47%. See Figure 5.47, Ofcom, Communications Market Report, July 2012, [http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr12/CMR_UK_2012.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr12/CMR_UK_2012.pdf).

\(^{71}\) Figure 5.44, Ofcom, Communications Market Report 2013, August 2013, [http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr13/2013_UK_CMR.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr13/2013_UK_CMR.pdf).

3.46 With respect to VoIP over fixed broadband, we note that a fixed access line is necessary to support fixed broadband access. As with residential customers, this will limit the extent to which businesses can switch to this alternative to avoid an increase in the price of their fixed line rental. However, as noted above, many businesses currently take more than one narrowband line. Such users would have the option of retaining a single fixed line connection to support broadband access and cancelling all other lines in favour of VoIP calls over the broadband line.

3.47 We are aware that some CPs serving business users are trying to encourage their customers to adopt this model. We also understand that take-up has remained relatively low to date despite the fact that this option offers significant cost savings over fixed narrowband access. We consider that this supports the view that there remain some barriers to switching to IP-based services. These barriers include consumer concerns in relation to quality of service and reliability, and the costs of switching (there may also be functionality differences, such as the availability of number portability, and issues with standards, as discussed in relation to ISDN30 and ISDN2 services (see Sections 4 and 5 respectively)). In particular, business end-user experiences and perceptions of IP-based services suggest they are considered inferior in respect of reliability and quality of service, and IP-based services can require additional (or upgrades to existing) equipment (e.g. handsets) which is an additional cost for any business considering switching. We also note that the quality of VoIP calls depends on the speed of the broadband connection and the other demands on its capacity (particularly as most businesses rely on broadband for data services as well), and so users limited to CGA connections may be deterred by lack of available bandwidth (although increased rollout and availability of NGA may reduce this). An increase in the price of fixed narrowband access is therefore unlikely to affect the speed of migration.

3.48 In light of this, while we accept that there is a degree of substitutability with IP-based services and that this may be increasing over time, we consider it would be too speculative at this stage to consider that VoIP over broadband will constitute a realistic alternative to fixed line access for the majority of business end-users within the period covered by this review. As such, we do not consider that the indirect constraint from VoIP over broadband is likely to be sufficiently strong within the forward look period of this review to warrant the inclusion of these services within the relevant market.

3.49 VoIP provided over other access solutions such as leased lines does not require an analogue exchange line, and so may offer an alternative to some business users wishing to avoid an increase in their fixed line rental (particularly those using digital access solutions rather than a service based on WFAELs). However, there are fundamental differences in the characteristics of WFAEL and leased line services. For example, the former provides access services to the entire network, whereas the latter provides a dedicated line between two locations. Therefore a business customer who wants to be able to make a VoIP call to any location would not be able to switch to a leased line access service. Further, we note that the price of a leased

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73 These barriers to switching are also relevant for the substitutability of IP-based services for ISDN lines, and so are discussed in more detail in Sections 4 and 5.

74 These barriers were also identified in relation to VoIP over broadband as an alternative for wholesale call origination. See paragraph 5.104 onwards of Ofcom, Review of the fixed narrowband services markets – statement, 26 September 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/nmr-2013/statement/Final_Statement.pdf.
line is significantly higher than for a WFAEL, given its dedicated nature and typically higher data speeds than those available via a fixed analogue exchange line. We also note that additional equipment would likely be required in addition to the leased line in order to provide the same functionality as a WFAEL.\textsuperscript{75} As a result of these underlying characteristic differences, we do not consider leased lines are likely to provide a sufficient indirect constraint on WFAEL prices, and so do not include this potential alternative within our market definition.

**Indirect demand constraints – competition based on digital access (ISDN2 and ISDN30)**

3.50 In previous reviews, including the 2010 WFAEL Statement and the 2009 Retail Narrowband Statement, we observed that ISDN2 and ISDN30 lines offered additional functionality over analogue exchange lines and commanded a price premium as a result. We consequently found that digital exchange lines were used in different ways and by different consumers from narrowband lines and that digital exchange lines did not provide an effective demand or supply-side substitute for analogue lines. We therefore concluded fixed narrowband analogue access and digital access were in separate markets.

3.51 We review the markets for wholesale ISDN30 and ISDN2 lines in Sections 4 and 5 respectively, where we set out the key developments in the retail market for ISDN lines as part of our consideration of indirect constraints. In this review of the retail markets for ISDN lines, we do not find any suggestion that the technical characteristics of these lines have changed in a way that would cause us to alter our previous conclusion that analogue and digital access are in separate markets, nor are we aware of any other market developments that would cause us to do so. As a result, we continue to consider that ISDN2 and ISDN30 are outside of the relevant market.

**Product market definition – other considerations**

**Business and residential customers**

3.52 In the 2010 WFAEL review, we found that the retail markets for business and residential customers were both supplied by a single wholesale market.

3.53 We are not aware of any market developments that would cause us to revisit these findings. We recognise that retail CPs in the business sector are currently more reliant on BT’s WFAELs than retail CPs in the residential sector, where MPF LLU and cable penetration is significantly higher (see Table 3.4, which sets out market shares in the business sector as part of our analysis of SMP). However, we do not consider that this is a sufficient basis to define two separate markets. Instead, we note that BT’s wholesale services are structured so that all wholesale services are offered to CPs serving both businesses and residential customers. All wholesale services are based on a core requirement, WLR Basic, with customers then being offered differing care levels depending on their needs. While CPs supplying business customers tend to select service packages with a higher level of care and CPs supplying residential customers less, this is by no means always the case. As a result, it is not possible for

\textsuperscript{75} This need for additional equipment was also identified as part of the ISDN market analyses, see Sections 4 and 5.
BT to distinguish between CPs buying WLR for business use and CPs buying WLR to supply residential customers.

3.54 We therefore consider that there would be a single market for residential and business consumers at the wholesale level in the absence of regulation.

**Bundled services and voice-only customers**

3.55 The proportion of retail customers buying bundles of broadband and voice together (‘dual-play’ customers) has increased since the last WLA market review (as noted by BT in its response to the July 2013 FAMR Consultation)\(^{76}\), with 57% of residential customers with a fixed line buying it together with broadband in a bundle in Q4 2013.\(^{77}\) At the same time, a material proportion of residential customers with a landline (17%) continue to take fixed voice but not fixed broadband — i.e. voice-only customers.\(^{78}\) It is therefore appropriate to assess the substitution patterns for the two segments separately.\(^{79}\)

3.56 At the retail level, we consider there is likely to be limited substitution between dual-play and voice-only packages in response to relative price changes in either direction.\(^{80}\)

3.57 At the wholesale level, the alternatives for supplying voice-only customers with an analogue exchange line differ from the alternatives for supplying those taking bundled offers. MPF LLU and cable (where available) can both be used to provide an analogue exchange line to dual-play customers. Although MPF LLU can technically be used to support a voice-only service, it is typically commercially viable only when used to provide a bundle of voice and broadband (as evidenced by the lack of voice-only MPF-based retail services). This is because the level and structure of retail prices relative to wholesale charges means that it is not typically economic to use MPF to supply voice-only customers. Therefore these customers can only be supplied using WLR on BT’s network or, in areas where cable is present, over Virgin’s cable network.

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\(^{77}\) We note this is a slight decline from Q1 2013 data (as used for the consultation), when this proportion stood at 60%. In Q4 2013, 62% of residential consumers with a fixed line who bought the fixed line in any bundle (i.e. not necessarily with broadband), compared to 65% in Q1 2013. See bespoke cross-tabs using underlying data from Ofcom, Technology Tracker, Q4 2013. General details on this survey are available at: www.ofcom.org.uk/static/research/Wave-1-2013-data-tables.zip.

\(^{78}\) Ibid.

\(^{79}\) Note this issue was also discussed in relation to wholesale call origination, in the 2013 Narrowband market review. See Section 5, Ofcom, Review of the fixed narrowband services markets – statement, 26 September 2013 http://stakeholders.ofcom.org.uk/binaries/consultations/nmr-2013/statement/Final_Statement.pdf.

\(^{80}\) In particular, we consider that voice-only customers are very unlikely to switch to dual-play given that the most frequently-cited reasons for not having home broadband is that they “don’t need it” (44%) and they did not want to get a PC (25%) (see Figure 5.68 of Ofcom, Communications Market Report 2013, August 2013, http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr13/2013_UK_CMR.pdf), and the price differential between voice-only and dual-play bundles is significant. For example, the differential between BT’s voice-only offer for residential customers ‘Unlimited Weekend Calls’ and the corresponding dual-play offer ‘Broadband’ (which includes free weekend calls) is £10/month (see www.productsandservices.bt.com/products/landline/packages).
3.58 We have therefore considered whether there might be a case for segmenting the WFAEL market according to whether it is used to supply voice-only customers or customers taking voice and broadband.\(^{81}\) However customers taking a dual-play offer are not the only relevant customer group in the latter segment, as there is a material group of customers who are not voice-only but for whom a dual-play offer over MPF may nonetheless not be suitable. In particular, while bundling is undoubtedly increasing overall, it is possible to buy broadband and fixed voice separately, and we note that a material proportion of residential customers with a landline (26% in Q4 2013\(^{82}\)) take a broadband line alongside a fixed voice connection but choose to buy the two products separately, despite the (often) material cost savings offered by the dual-play packages. These consumers would have limited alternatives to WLR from BT.

3.59 In addition to these 26% of residential customers, we consider it likely that a large number of business users (who in total account for approximately 13% of all WFAELs in the UK (including the Hull area)) buy voice and broadband separately. This is because many business users are likely to have needs that would not be well served by a dual-play LLU offer (e.g. because they need additional fixed lines or require a service which offers greater technical support). This is reflected in the lower penetration of the LLU CPs using MPF in this segment, which we discuss in more detail in paragraphs 3.111 to 3.115. Taken together, these residential and business customers for whom a dual-play MPF bundle is not a sufficient substitute could account for a relatively significant proportion of those taking fixed voice and broadband (and so would be reliant on WLR from BT, or a voice-only service via cable, where available).

3.60 Finally, customers living in non-MPF areas will have to be supplied using BT’s WLR regardless of whether they are dual-play or not.

3.61 Therefore we do not consider it would be appropriate (or indeed have any impact on our ultimate finding of SMP) to segment the market into voice-only customers and customers who buy both voice and broadband (either as dual-play or separately). This is because segmenting the market in this way would result in a material proportion of customers in the latter market who have limited or no alternatives to BT’s WFAELs for an analogue exchange line (being made up of those who live in non-MPF areas, residential users who buy the two products separately (at least to some extent) and some business users). Because of this, we would be likely to reach the same view on SMP for WFAELs used to supply the dual-play segment as we would for WFAELs used to supply voice-only customers. On this basis, we consider the two segments are sufficiently homogenous in terms of competitive conditions to define a single market encompassing both.

\(^{81}\) We do not consider it practical to assess a single ‘dual-play’ segment, and instead consider that if we were to segment the market, it would be more appropriate and practical to assess all buyers of voice and broadband (i.e. whether bought separately or in a retail dual-play bundle) together in a single voice+broadband market segment. This is for the same reasons discussed in relation to this issue in wholesale call origination, namely, that it is likely to be difficult for BT to accurately distinguish at the wholesale level between WLR bought by a CP for the provision of retail services to a split voice and broadband customer and for the provision of retail services to a dual-play bundle customer. See paragraph 5.125, Ofcom, Review of the fixed narrowband services markets – statement, 26 September 2013 http://stakeholders.ofcom.org.uk/binaries/consultations/nmr-2013/statement/Final_Statement.pdf.

\(^{82}\) Proportion of residential consumers with a fixed line, who have a fixed line and fixed broadband where these are not bundled together. Technology Tracker, Q4 2013. General details on this survey are available at: www.ofcom.org.uk/static/research/Wave-1-2013-data-tables.zip.
3.62 We consider that this view may be reinforced by the anticipated move towards broadband over fibre. As MPF cannot be used to provide superfast broadband, this migration to fibre may limit any further increase in deployment of MPF and the competitiveness of the dual-play segment.

3.63 In light of these considerations, we continue to consider it appropriate to define a single market for WFAELs used to supply both voice-only customers and those buying voice and broadband.

**Customers taking voice and broadband over fibre**

3.64 In relation to whether our market for WFAELs should include voice access over fibre, we note that fibre-to-the-cabinet (‘FTTC’) is the predominant form of fibre deployment to date and currently this is provided incrementally to a narrowband voice line. We therefore do not consider it appropriate to include this form of fibre access in the market for WFAELs. However, where it is necessary for a fibre deployment to support fixed voice access, notably FTTP in conjunction with an ATA, we include this within our relevant market, as we did in the 2010 WFAEL Statement, on the basis that the service presented to the end-user was very similar. We are not aware of any developments that would cause us to revise this view and therefore continue to include these services within our relevant market.

3.65 We recognise that all types of fibre access may be used to support VoIP calls and that together VoIP and broadband over fibre access may constitute a potential alternative to WFAELs. We considered this potential alternative in our analysis of the constraint from broadband access (paragraphs 3.40 to 3.49) and concluded it is not likely to be a sufficiently close constraint within this review period to be included in the same market. We therefore do not consider it is necessary to define a separate market for voice access services provided over fibre in this review as we consider these are captured within our market definition where relevant.

3.66 However, we do recognise that the deployment of fibre access may have potential implications for BT’s market power in the provision of WFAELs for the reasons set out in paragraph 3.62. We do not consider it appropriate to reflect this potential development by defining separate markets for voice access alongside fibre at this stage, but rather take this into account in our assessment of SMP.

**Alternative fixed networks**

3.67 Our market definition in the 2010 WFAEL Statement included wholesale analogue exchange lines supplied over alternative fixed networks, including MPF LLU and cable on the basis that a significant proportion of respondents to a 2009 consumer survey indicated they would be willing to switch between providers using these technologies.

3.68 We consider that retail customers continue to view fixed narrowband access provided over alternative technologies to be interchangeable. As we discuss in more detail in relation to our SMP assessment, BT has seen a significant reduction in its market share of WFAELs since the 2010 review largely as a result of switching to MPF LLU. Stakeholders have not provided any evidence suggesting that there has been a reduction in the extent to which retail customers consider cable access to be a substitute for access over BT’s network.

3.69 As a result, we continue to consider it appropriate to include WFAELs provided over alternative fixed networks, including cable and MPF LLU, within our relevant market.
Final conclusion on product market

3.70 In light of the analysis set out above, we consider that wholesale fixed analogue exchange lines are not sufficiently constrained by digital, mobile or broadband access for these services to be included within the same relevant market. As a result we define a product market for wholesale fixed analogue exchange lines, which includes analogue exchange lines delivered in the following ways:

- copper access;
- cable access;
- MPF LLU; and
- FTTP deployments offering a narrowband voice service using an ATA.

Geographic market definition

Geographic market definition in the 2010 WFAEL Statement

3.71 In the 2010 WFAEL Statement we defined two geographic markets:

- the UK excluding the Hull Area; and
- the Hull Area.

3.72 In reaching these geographic market definitions at the wholesale level in the 2010 WFAEL Statement, we recognised that deployments of cable and MPF LLU had occurred in discrete geographic areas. However, we considered that, at the retail level, it was appropriate to extend the geographic market boundaries to the area covered by BT’s network as a result of the common pricing constraint implied by BT’s universal service obligation. We considered it was appropriate to extend the geographic market in the same way at the wholesale level. We noted that there were additional commercial drivers which would be likely to lead to uniform pricing at the wholesale level, including the costs associated with more granular pricing (so-called ‘menu costs’). We also observed that we had seen uniform pricing in the retail fixed narrowband analogue access market, even where cable and MPF LLU had been deployed.

Key developments since the last review

3.73 We take as our starting point for our assessment the geographic markets defined in the 2010 WFAEL Statement and described above. We now consider whether there have been any developments in the market since this time which would make it appropriate to define more localised markets.

3.74 One key development in this respect has been the considerable increase in use of MPF LLU, which supports the provision of analogue exchange lines to retail customers buying a bundle of voice and broadband. This has been achieved to a large extent through conversion of SMPF lines, which do not support the provision of analogue exchange lines to any customers.

3.75 This increase in MPF use has increased the scope for local variations in wholesale competition, at least for dual-play customers, since the market was last reviewed. In MPF LLU-enabled areas, dual-play customers will be able to take a fixed line
package from at least one CP who does not need to buy BT’s WLR to compete at the retail level. The most competitive localities are now likely to offer a degree of choice to dual-play customers. We have considered whether it is appropriate to define local markets (in line with our conclusions in the 2014 WBA Statement\(^{83}\)). However, we note there is a key difference in the use of LLU for broadband and for fixed voice access, which means that the WBA approach is not appropriate in the current context. In particular, LLU (either SMPF or MPF) can be used to supply all retail broadband customers wherever it is present, whereas for fixed voice access, only MPF can be used, and even then it cannot be used to provide all retail fixed voice customers with an analogue exchange line, even where it is present.

3.76 For the reasons set out above, we consider there are a material group of customers who are difficult for retail CPs to serve without being able to access BT’s WFAELs during the course of this review period, even in areas where there are multiple MPF CPs. These customers include the voice-only customers and (to some extent) those buying voice and broadband separately (i.e. not bundled together), who combined account for approximately 43% of all residential landline users (in Q4 2013) and are spread across the UK excluding the Hull Area. In addition to these residential users, we consider that CPs serving a large number of business end-users are also likely to have limited alternatives to BT’s WLR (business end-users account for approximately 15% of WFAELs in the UK excluding the Hull Area in Q4 2013). For these customer segments, competitive conditions are clearly sufficiently similar across the UK excluding the Hull Area to define a single geographic market. We also consider it possible that demand for further MPF LLU deployments (both in terms of further rollout and conversion of existing SMPF to MPF) may slow down as a result of the anticipated move to fibre-based broadband. If this occurs, it would limit any further increases in the variation of competitive conditions across the UK.

3.77 We recognise that there is a degree of interaction between product and geographic market definition in this context. In particular, we are aware that if we were to define separate markets for voice-only and voice and broadband customers (whether dual-play or buying both separately) then there may be a case for defining different geographic markets for each. For voice-only customers, we would be likely to define a single market for the UK excluding the Hull Area on the basis of similar competitive conditions throughout. For customers taking both voice and broadband, we recognise there would be a case for defining more localised geographic markets based on the number of MPF LLU CPs present in an area.

3.78 However, we do not consider that this would be appropriate for this market review. As set out above (see paragraphs 3.58 to 3.59), there is a material group of customers taking both voice and broadband in MPF LLU-enabled areas who may still be reliant on CPs with limited alternatives to BT’s WLR (e.g. those who buy the two separately, for whom a dual-play bundle is not a sufficient substitute). The existence of these customers means that competitive conditions even for customers taking voice and broadband are likely to be more homogenous across geographic areas than if all customers were able to take dual-play over MPF.

3.79 Taken together, we consider that these factors result in sufficiently homogenous conditions to support a single geographic market for WFAELs in the UK excluding the Hull Area for the period covered in this market review.

3.80 We also consider that there is a separate (but single) market within the Hull Area. BT does not supply WFAELs in the Hull Area, meaning competitive conditions are unlikely to be homogenous between the Hull Area and the rest of the UK. Moreover, since there is no cable or MPF LLU footprint in this area, there are no geographic variations in competitive conditions that justify defining more localised markets. As a result, we believe that the Hull Area represents a single geographic market.

Final conclusion on geographic market

3.81 In light of the above, we define two geographic areas:

- the UK excluding the Hull Area; and
- the Hull Area.

Three-criteria test for WFAEL

3.82 Under the European Framework, and in particular Article 15 of the Framework Directive, in considering whether or not it is appropriate to impose regulation in electronic communications markets, NRAs must begin by defining relevant markets appropriate to national circumstances in accordance with the principles of competition law and taking utmost account of the Relevant Markets Recommendation.84

3.83 As set out in Section 2, the Relevant Markets Recommendation seeks to "identify those product and service markets within the electronic communications sector the characteristics of which may be such as to justify the imposition of regulatory obligations set out in the Specific Directives, without prejudice to markets that may be defined in specific cases under competition law".85 It therefore lists a number of markets in which the European Commission considers that ex ante regulatory obligations may be warranted, taking into account the particular features of those markets.

3.84 The WFAEL market is not listed in the Relevant Markets Recommendation. However, the Relevant Markets Recommendation also recognises that there may be other markets, aside from those specifically identified, in which it is appropriate to impose ex ante regulatory obligations according to national circumstances. In order to assess whether it is appropriate to impose such obligations in a market not listed, the Relevant Markets Recommendation sets out the following three criteria which must all be met ("the three-criteria test"):

- the presence of high and non-transitory barriers to entry. These may be of a structural, legal or regulatory nature;

84 We note the EC is in the process of revising its Recommendation on relevant markets, but it is currently in the consultation process and has not yet been finalised.
3.85 We now set out our analysis of the three-criteria test in relation to WFAEL.

**Provisional conclusion as set out in the July 2013 FAMR Consultation**

3.86 We were of the view that our market definitions satisfy the criteria set out in the Relevant Markets Recommendation and that it is appropriate to analyse these markets to determine whether any provider holds SMP.

**Stakeholder responses to the July 2013 FAMR Consultation**

3.87 No respondents to the July 2013 FAMR Consultation raised specific concerns or comments about the application by Ofcom of the three criteria test for WFAEL.

**Our analysis and conclusions**

3.88 As noted above, the WFAEL market is not listed in the Relevant Markets Recommendation as a market in which *ex ante* regulation may be warranted. Therefore, taking utmost account of the Relevant Markets Recommendation, we have applied the three-criteria test to the WFAEL market, as outlined above, in order to assess whether *ex ante* regulation is appropriate.

3.89 In relation to the WFAEL market for the UK excluding the Hull Area identified above we consider that the three criteria set out in the Relevant Markets Recommendation are met:

- the presence of high and non-transitory barriers to entry: we consider that significant barriers to entry remain. This is discussed in more detail in our section on barriers to entry and expansion in our analysis of SMP (paragraphs 3.136 to 3.139);
- a market structure which does not tend towards effective competition within the relevant time horizon: we consider that the market does not display a tendency towards competition in this review period. As we discuss in more detail below, BT has maintained a high market share over time and is currently pricing at the cap imposed by the charge control. This is discussed in more detail in the

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section on market shares (paragraphs 3.102 to 3.119, where we also identify potential limitations to any further decline in BT’s market share in this review period) and prices and profitability (paragraphs 3.142 and 3.143) in our SMP assessment; and

- **the insufficiency of competition law alone to adequately address the market failure(s) concerned**: we consider that competition law would not be sufficient to address concerns in this market. As we explain below, we do not believe this market will tend towards competition within the relevant time horizon and therefore *ex ante* regulation is necessary to promote effective competition (particularly downstream).

3.90 Similarly, we consider that, in relation to the WFAEL market for the Hull Area identified above, that the three-criteria test is met:

- **the presence of high and non-transitory barriers to entry**: as discussed below, we consider that significant barriers to entry remain;

- **a market structure which does not tend towards effective competition within the relevant time horizon**: as we discuss in more detail below, we consider that the defined market does not display a tendency towards competition. KCOM has almost a 100% share of the relevant market, barriers to entry and expansion remain substantial and there is no effective countervailing buyer power; and

- **the insufficiency of competition law alone to adequately address the market failure(s) concerned**: we consider that competition law would not be sufficient, by itself, to address concerns in this market. As we explain below, we do not believe this market will tend towards competition within the relevant time horizon and therefore *ex ante* regulation is necessary to promote effective competition (particularly downstream).

**Final conclusion on the application of the three-criteria test**

3.91 In light of the above, we are of the view that our market definitions satisfy the criteria set out in the Relevant Markets Recommendation and that it is appropriate to analyse these markets to determine whether any provider holds SMP.

**Conclusions on market definition**

3.92 In light of the analysis set out above, and having applied the three-criteria test, we have defined the following markets for the purposes of making a market power determination:

- a market for wholesale fixed analogue exchange lines in the UK excluding the Hull Area; and

- a market for wholesale fixed analogue exchange lines in the Hull Area.

**Market power assessment**

**Provisional conclusion as set out in the July 2013 FAMR Consultation**

3.93 Our provisional conclusion was that:
• BT will continue to have SMP in the WFAEL market in the UK excluding the Hull Area; and

• KCOM will continue to have SMP in the WFAEL market in the Hull Area.

Stakeholder responses to the July 2013 FAMR Consultation

3.94 We first set out stakeholder responses specific to our assessment of market power in the UK excluding the Hull Area, and then set out responses for the Hull Area.

The UK excluding the Hull Area

3.95 Of those respondents who explicitly commented on the market power assessment, EE\(^{88}\), the FCS\(^{89}\), TalkTalk\(^{91}\), Verizon\(^{92}\), Virgin\(^{93}\) and Vodafone\(^{94}\) agreed with our conclusion that BT had SMP in the defined WFAEL market in the UK excluding the Hull Area. Further, Vodafone stated that the WFAEL market had significant barriers to market entry and, although in decline, would remain important over the coming review period. It submitted that the existence of SMP was not going to change over the course of the period covered by this review as new market entry would not occur.

3.96 BT also considered not unreasonable Ofcom’s provisional assessment that BT had SMP in the WFAEL market in the UK excluding the Hull Area. However, it did note that the market conditions had changed significantly since the last WFAEL review in 2010 (noting, in particular, a change in absolute volumes and the relative proportions of MPF and WLR lines). As a result, BT submitted that MPF acted as a strong constraint on WLR pricing and so, at a minimum, would require Ofcom to look more closely at the level of regulation which was proportionate to apply to WLR products and pricing in future reviews.\(^{95}\) In addition to the impact of MPF, BT also submitted that there were a number of other developments driving change in the WFAEL market which were acting to reduce its market power (such as developments in mobile\(^{96}\), NGA and VoIP services, and retail bundling and the market position of other CPs\(^{97}\)). It considered that these factors would increasingly impact the demand

\(^{88}\) P.5, EE response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.
\(^{89}\) P.2, FCS response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Federation_of_Communication_Services_Ltd.pdf.
\(^{90}\) [\[\]]
\(^{96}\) E.g. mobile-only households and developments in 4G services.
\(^{97}\) Including Virgin as well as other CPs who also bundle voice, broadband and content services.
for WLR, and so would need to be fully assessed in future reviews of market definitions and SMP assessments.\(^98\)

3.97 Additionally, \([\hfill]\) raised concerns about overstating the competitive constraint from the rollout of LLU. It considered that, while MPF did allow a degree of competition and exerted some constraint on traditional WLR deployments, LLU only "costs in" for a large residential broadband customer base. The lack of an SMPF voice-only product, it noted, meant that "an LLU operator either has to compete for voice and data together in a dual play with MPF, or be reliant on other forms of voice competition or provision over SMPF". It considered that the difficulties in switching between WLR with SMPF and MPF discouraged consumer switching. Further, it considered that LLU understated the importance of WLR to business-focused CPs who were reliant on it to provide a variety of voice and data services that fit the needs of small to medium sized businesses.\(^99\)

The Hull Area

3.98 KCOM did not dispute our SMP finding in the Hull Area for the WFAEL market in the period covered by this market review. However, it expected significant competitive constraints to emerge in this market for the first time from alternative fixed access infrastructure. In particular, it submitted that MS3 Communications Ltd.'s ('MS3') network rollout was more extensive than Ofcom had previously considered and had the potential to have a significant impact on KCOM's business both at a wholesale and retail level over the period of the market review (and potentially in the residential segment as well as for businesses).\(^100\)

3.99 EE\(^101\), the FCS\(^102\), Verizon\(^103\), Virgin\(^104\) and \([\hfill]\)\(^105\) agreed that KCOM has SMP in the WFAEL market in the Hull Area.

Our analysis and conclusions

Introduction

3.100 Below we set out our assessment of whether any CPs possess SMP in the WFAEL markets that we have defined above. In making that assessment we have had regard to the criteria for assessing SMP set out in the EC SMP Guidelines, and to stakeholder responses to the July 2013 FAMR Consultation. Our general approach to the assessment of market power is described in Annex 3.


\(^100\) P.5, EE response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.


3.101 We conduct our assessment by analysing competitive conditions in light of recent market trends and anticipated future developments, taking into account stakeholder responses to the July 2013 FAMR Consultation (as summarised above). We first consider recent trends in market shares and their expected evolution during the period covered by this review.\(^{106}\) We then take into consideration other criteria set out in the EC SMP Guidelines including:

- constraints from competing services at the wholesale and retail level;
- the existence of barriers to entry/expansion;
- the strength of countervailing buyer power; and
- pricing in the market.

**Assessment of market power in the UK excluding the Hull Area**

**Market shares**

3.102 The evolution of market shares for the wholesale analogue exchange line market for the UK excluding the Hull Area is shown in Table 3.3:

<table>
<thead>
<tr>
<th>Year</th>
<th>BT (WLR)</th>
<th>Virgin</th>
<th>LLU (MPF) and other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>84%</td>
<td>14%</td>
<td>2%</td>
</tr>
<tr>
<td>2004</td>
<td>84%</td>
<td>15%</td>
<td>1%</td>
</tr>
<tr>
<td>2005</td>
<td>84%</td>
<td>14%</td>
<td>2%</td>
</tr>
<tr>
<td>2006</td>
<td>84%</td>
<td>14%</td>
<td>2%</td>
</tr>
<tr>
<td>2007</td>
<td>81%</td>
<td>15%</td>
<td>2%</td>
</tr>
<tr>
<td>2008</td>
<td>79%</td>
<td>15%</td>
<td>4%</td>
</tr>
<tr>
<td>2009</td>
<td>74%</td>
<td>15%</td>
<td>6%</td>
</tr>
<tr>
<td>2010</td>
<td>68%</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>2011</td>
<td>65%</td>
<td>15%</td>
<td>17%</td>
</tr>
<tr>
<td>2012</td>
<td>61%</td>
<td>15%</td>
<td>20%</td>
</tr>
<tr>
<td>2013</td>
<td>57%</td>
<td>15%</td>
<td>24%</td>
</tr>
</tbody>
</table>

Source: Ofcom and CPs’ data, position as at Q4 of each year.

3.103 Table 3.3 shows that BT’s market share has declined from 84% in 2003-06 to 57% in 2013. Virgin’s share has remained approximately constant over the same period, with the decline of BT’s market share resulting from the growth in the use of MPF. This indicates that there has been a significant increase in the competitive constraint on BT from MPF LLU since the last review. We expect that the use of MPF LLU may continue to erode BT’s market share during the period covered by this market review. This increasing constraint from MPF was also noted by BT in its response to the July 2013 FAMR Consultation (see above in paragraph 3.96).

3.104 However, there are some groups of customers for whom there are currently limited alternatives to BT’s WLR (as noted by [3]), as set out above in paragraph 3.97). To the extent this remains the case throughout the forward looking period covered by this review, the existence of these groups of customers is likely to limit any further decline in BT’s market share. These customers include:

- customers in off-net areas;

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\(^{106}\) BT highlighted a number of developments which it considered that we will need to take into account in future market reviews (see paragraphs 126-127 of its response to the July 2013 FAMR Consultation, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf)). We have considered these points as appropriate to the extent that they are relevant to the market definition and SMP assessment in this review period. However, we do not seek to draw conclusions here for the next market review and will consider such issues as appropriate at that time.
• voice-only customers;
• customers buying voice and broadband separately; and
• business users.

3.105 We now discuss each group in turn, considering how their preferences may evolve over the course of this review period.

Customers in off-net areas

3.106 This group of customers amounts to approximately 6% of the residential segment. They are outside the MPF LLU/Virgin footprint and retail CPs competing with BT are therefore reliant on access to BT’s WLR to be able to supply these customers with an analogue exchange line. We do not expect further expansions to the MPF LLU footprint to have a material impact on the size of this group of customers for reasons described in paragraph 3.116. While we understand that Virgin could expand its network footprint, it is not clear that this will significantly affect its footprint (particularly relative to the comparatively larger MPF LLU footprint) in this review period such that it materially reduces the extent of customers in off-net areas.

Voice-only customers

3.107 Voice-only customers accounted for 17% of the residential segment with a landline in Q4 2013. As noted in paragraph 3.57, it is not currently economic to provide a voice-only service over MPF LLU, and so MPF LLU is unlikely to be used to self-supply wholesale analogue exchange lines to these customers. We consider that the proportion of voice-only customers is likely to decline during the period covered by this review as broadband take-up continues. However, we expect it to decline slowly, reflecting the already-high broadband penetration rate and the slow incremental uptake in recent years, as shown in Figure 3.1 below.

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107 Approximately 94% of homes were connected to an LLU-enabled BT local exchange in 2012. Figure 1.2, Ofcom, Communications Market Report 2013, 1 August 2013, http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr13/2013_UK_CMR.pdf.
108 We also discuss the potential additional LLU rollout further in Section 4 of the 2014 WBA statement. Ofcom, Review of the wholesale broadband access markets – statement, 20 May 2014, http://stakeholders.ofcom.org.uk/consultations/review-wba-markets/draftstatement/.
109 This is also discussed as part of the geographic market definition in the 2014 WBA Statement (Section 4). Ofcom, Review of the wholesale broadband access markets – statement, 20 May 2014, http://stakeholders.ofcom.org.uk/consultations/review-wba-markets/draftstatement/.
3.108 We therefore consider that voice-only customers are likely to remain a material proportion of all landline users within the period covered by this review.

**Customers buying voice and broadband separately**

3.109 Our market research suggests approximately 26% of residential consumers with a landline had both a fixed line and fixed broadband but bought them separately (i.e. not bundled together) in Q4 2013, despite the fact that the dual-play offers combining the two services are usually cheaper.\(^{111}\) As with voice-only customers, it is not currently economic to use MPF to supply voice services to these customers.

3.110 While we expect there to be some decline in the size of this group over the course of this review period as legacy customers are migrated onto MPF, we consider that this decline is likely to be limited. This is because we consider that most price sensitive customers are likely to have switched to MPF LLU operators already.\(^{112}\) As a result, we consider that many of these customers may be buying voice and broadband separately because doing so offers them something the (often) cheaper dual-play offer cannot.

**Business customers**

3.111 Business customers (15% of the WFAEL market in the UK excluding Hull in Q4 2013) may also be more dependent on WLR-based products due to the limited penetration to date of MPF LLU and cable in this segment (we consider this to be consistent with [\(\text{[3]}\)] argument (summarised above in paragraph 3.97) about the

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\(^{111}\) Ibid.

\(^{112}\) In this respect, we note that, in 2005, the MPF rental charge was capped so as to be substantially below that for WLR and WLR plus SMPF. However, the difference between these charges began to reduce in 2008 and has continued to decline over time (see Figure 7.4, Ofcom, Charge control review for LLU and WLR services, 7 March 2012, [http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/statement/statementMarch12.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/statement/statementMarch12.pdf)). As set out in Volume 2, this reduction will continue until the difference in wholesale charges ultimately reflects the LRIC differential.
importance of WLR to business-focused CPs).\footnote{Historically, LLU and cable CPs have focused more on residential customers, while competition with BT in the business market comes to a much greater extent from resellers of BT’s wholesale products.} As Table 3.4 illustrates, BT holds an 82% share of WFAELs used to supply the business segment, which is significantly higher than its share of the overall WFAEL market.

### Table 3.4: Market shares of WFAELs used to supply business customers in the UK excluding the Hull Area

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</tr>
</thead>
<tbody>
<tr>
<td>BT (WLR)</td>
<td>89%</td>
<td>91%</td>
<td>93%</td>
<td>95%</td>
<td>95%</td>
<td>95%</td>
<td>89%</td>
<td>84%</td>
<td>84%</td>
<td>82%</td>
<td>82%</td>
</tr>
<tr>
<td>Virgin</td>
<td>3%</td>
<td>4%</td>
<td>2%</td>
<td>2%</td>
<td>3%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>LLU (MPF) and other</td>
<td>8%</td>
<td>5%</td>
<td>5%</td>
<td>3%</td>
<td>2%</td>
<td>3%</td>
<td>8%</td>
<td>14%</td>
<td>14%</td>
<td>16%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Source: Ofcom and CPs’ data, position as at Q4 of each year. Figures may not sum to 100% due to rounding.

3.112 One reason for BT’s relatively high market share of the business segment is that, in the past, Virgin has primarily targeted the residential segment which it has supplied using its cable network. We expect this to continue in this review period.

3.113 We also note that MPF LLU operators have seen an increase in take-up of MPF LLU by business users previously using WLR (up to 16%), and could seek to increase this further in this review period, for example by increasing investment specific to this segment\footnote{Further investment may be needed, for example, as CPs wishing to attract and retain certain business customers may need the ability to maintain an uninterrupted and high-quality service over their network infrastructure, to identify and cater to the specific requirements of business users and to offer a higher degree of customisation than those serving residential users.} \footnote{As discussed above, it is not economically viable to provide a voice-only service using MPF.} However, businesses can have differentiated needs, and some WFAEL needs might not be well-served by a dual-play MPF-based offer (e.g. because they need additional fixed lines for voice-only services\footnote{Historically, LLU and cable CPs have focused more on residential customers, while competition with BT in the business market comes to a much greater extent from resellers of BT’s wholesale products.}). We consider that these differences are reflected in the lower penetration of the MPF LLU operators in the business segment to date (particularly relative to the residential segment), and could tend to slow growth in penetration by them in this review period.

3.114 As set out in relation to market definition, we consider it likely that some business users may give up their fixed line access in favour of an IP-based solution. However, we do not expect BT’s market share in the business segment to be significantly affected by this trend within this review period for the reasons set out in paragraphs 3.40 to 3.49.

3.115 We therefore consider that the proportion of businesses that retail CPs can only realistically serve using BT’s WLR is likely to remain high in this review period.

**Additional factors limiting further decline in BT’s market share**

3.116 In addition to the existence of customers for whom there are likely to remain limited alternatives to WLR, we consider there are likely to be other factors limiting any further reduction in BT’s market share during this review period. These include the fact that:

- **the rate at which exchanges are unbundled is likely to slow down:** we expect the pace at which exchanges are being fully unbundled by MPF LLU CPs to slow
in the future, as exchanges not yet unbundled are likely to be characterized by higher connection costs (e.g. more remote exchanges) and to be of a smaller size. We also expect that LLU CPs will be conscious of the likely migration of customers to broadband over fibre in the medium term, which is likely to reduce demand for broadband over LLU from current levels (see third bullet below). We consider that CPs are likely to be cautious about investing further in a technology which is likely to be in decline;

- **there are operational constraints on the speed at which remaining SMPF lines will be converted to MPF:** approximately 18% of LLU lines supplied externally by Openreach (i.e. bought by CPs other than BT) were SMPF in Q4 2013.\(^{116}\) SMPF lines cannot support voice services and so cannot be used to self-supply WFAELs. We understand from LLU CPs that they intend to convert as many SMPF lines to MPF as possible in MPF-enabled exchanges since it is more profitable for them. However, the speed at which they do so is limited by factors which are not related to the price of wholesale analogue exchange lines\(^{117}\); and

- **anticipated roll-out and uptake of fibre-based broadband may limit additional demand for LLU:** as set out in paragraph 3.62, we consider it possible that developments in broadband over fibre could limit demand for additional deployments of MPF LLU.

3.117 As a result of all of the above factors, we consider it unlikely that the share of WFAELs supplied over MPF LLU will increase by any material amount during the period covered by this review. Further, while we acknowledge that Virgin is considering expanding its network footprint (as discussed above), we consider it unlikely that this will significantly reduce BT’s market share in this review period. We therefore consider it likely that BT’s market share will still be greater than 50% by the end of this review period. We also note that, even if BT’s market share were to fall below the 50% threshold, it would be very unlikely to fall below 40%, as this would require a faster annual percentage point decline than the average over the last three years (4%), which we consider unlikely given the factors outlined above.

3.118 There are some segments of the market where BT’s market share is likely to remain significantly higher than 50% during this review period, notably those customer segments identified above in paragraph 3.104 as having limited alternatives to WLR.

3.119 On the basis of the above considerations, we expect that our concerns about the existence of a dominant position in the market will persist during the period of this review. Indeed, as noted in paragraph 3.117, by 2017 BT is still likely to hold a market share above 40% in the overall WFAEL market and hold a market share considerably higher than this for certain customer groups. In such circumstances, in

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\(^{116}\) SMPF figures include Generic Ethernet Access (fibre) provided by Openreach to other CPs on WLR lines See P.7, BT, *Key Performance Indicators Q3 2013/14*, available here [http://www.btplc.com/Sharesandperformance/Quarterlyresults/PDFdownloads/q314-KPIs.pdf](http://www.btplc.com/Sharesandperformance/Quarterlyresults/PDFdownloads/q314-KPIs.pdf).

\(^{117}\) For example, CPs may consider that the most efficient way of converting SMPF lines to MPF is to use bulk migration, which requires a critical mass of customers to be economic.
accordance with the EC SMP Guidelines, we remain concerned about the existence of single firm dominance.\textsuperscript{118}

3.120 While market shares provide useful indications of the competitiveness of the market in line with the EC SMP Guidelines, we have also considered the following additional factors that affect the competitive interaction between CPs in the WFAEL market. These factors are:

- constraints on wholesale prices from substitute services (both at wholesale and retail levels);
- barriers to expansion (particularly for LLU CPs);
- countervailing buyer power; and
- pricing.

Constraints from competing services

3.121 We have assessed the extent to which BT’s ability to increase the price of WLR is constrained by the existence of suppliers of substitute wholesale services (i.e. MPF LLU CPs and Virgin) and by the capability of retail consumers to switch to suppliers who use wholesale inputs that are substitutes to WLR. Together, these constraints may be sufficient to prevent BT from increasing the price of WLR even if individually they would not be. Market shares (discussed above) are one source of evidence on the constraints from competing services. To supplement this evidence, we discuss in more detail below the strength of competition as a result of constraints from competing services at both the wholesale and retail levels.

Existence of suppliers of substitute wholesale services

3.122 As discussed in paragraph 3.20, MPF LLU CPs and Virgin provide an alternative wholesale service to BT’s WLR. They are currently both used predominantly to self-supply analogue exchange lines but may also be used to supply third party CPs.

3.123 We consider that the potential for direct substitution by CPs currently using WLR to MPF LLU or cable is likely to be limited for the following reasons.

3.124 In the first instance, we consider that CPs without their own network have limited potential for substitution to wholesale services over MPF LLU and cable. While we recognise there has been some sale of wholesale inputs based on MPF LLU to third party CPs, we note that this has been relatively limited to date.\textsuperscript{119} On the demand-


\textsuperscript{119} Some LLU operators, notably TalkTalk and Vodafone, offer wholesale products to third party CPs (see paragraph 5.181, Ofcom, Review of the fixed narrowband services markets – statement, 26 September 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/nmr-2013/statement/Final_Statement.pdf). We also note that TalkTalk has partnered with Fujitsu and Capita to deliver the NGN platform for the Post Office http://www.talktalkbusiness.co.uk/news-events/news-ttb-listing/video-news/talktalk-partners-with-fujitsu-and-post-office/.
side, we consider that this may reflect the additional costs to CPs which buying wholesale access from suppliers other than BT entails. Moreover, the same limitations to self-supply over MPF LLU discussed in paragraphs 3.104 to 3.115 (e.g. coverage limitations, commercial viability for particular consumer segments, and operational limitations) apply to its use as a wholesale input, which may limit the attractiveness of this option for CPs.

3.125 On the supply side, MPF LLU CPs and Virgin may be unwilling to provide a wholesale input to third party CPs because of strategic considerations (e.g. a wish to maintain control over their own network and/or avoid cannibalisation of their own customers). As a result, we consider use of this option is likely to remain limited.

3.126 We also consider there are limitations to the potential for increased self-supply by the MPF LLU CPs and Virgin in this review period, for the reasons set out in paragraphs 3.104 to 3.115.

3.127 On the basis of the above considerations, we consider the potential for CPs currently using BT’s WLR to switch to alternative wholesale services is likely to be limited during the period covered by this review. As a result, we do not consider that they represent a material constraint on BT’s ability to increase the price of WLR above the competitive level.

Constraints from retail consumers switching

3.128 We have also considered whether retail consumers can impose a constraint on increases in the price of BT’s WLR product by switching to providers who do not use WLR.

3.129 As set out in paragraph 3.20, no CP other than BT is able to self-supply voice services across all of the UK. An increase in the WLR charge would therefore lead to an increase in the cost to retail CPs of supplying at least some of their customer base. However, the extent to which individual CPs would see an increase in their average costs following an increase in the WLR charge depends on their ability to use alternatives to BT’s WLR to serve their customers.

3.130 For CPs without their own network, an increase in the price of WLR increases the cost of supplying all of their customers. For MPF LLU CPs and Virgin, the proportion of their customer base that it will become more costly to supply is smaller than this and is limited to those customers who are either located in an off-net area, buying a voice-only product (whether with or without a separately bought broadband line) or who are supplied with a dual-play offer using SMPF. These customers appear to account for approximately 15% of all MPF LLU CPs’ customers (based on total WLR purchases by CPs who also buy MPF), although this figure varies significantly on a CP by CP basis.

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120 Example of costs additional to the LLU/cable charge include: the costs of managing multiple contracts due to the sub-national coverage of the LLU/cable networks; the costs of connecting to the LLU/cable network; and the costs of dealing with quality issues arising from migrating customers.

121 We also note that many of these limitations are impacted by wider commercial and operational considerations, and as such are unlikely to be significantly affected by the price of WLR alone.

122 Figures obtained by dividing the number of WLR lines bought by LLU CPs by the sum of WLR and MPF lines bought by LLU CPs. Data on LLU and WLR lines based on information received from BT.
3.131 These cost increases are likely to be passed onto retail customers, at least to some degree, creating differentials between retail prices reflecting the extent to which the various CPs are able to self-supply. If the resulting retail price differentials induce a sufficient number of consumers to switch to CPs with lower prices, then this may provide a constraint on BT’s ability to profitably increase WLR prices.

3.132 In contrast to our findings in the past market reviews, there is now a significant number of retail customers who, in response to any price increase, could switch to a CP who can use alternatives to BT’s WLR to compete at the retail level. This is largely a result of the significant increases in MPF LLU roll-out described above, which provides an alternative to WLR for all customers buying voice and broadband from the same supplier in areas where it has been deployed. We consider it likely that a significant proportion of these customers would be likely to exercise this option to switch in response to any price increase. We also note that a small number of customers may be able to switch to either mobile or VoIP with broadband access (as discussed in paragraphs 3.28 to 3.49).

3.133 However, there are also a significant number of customers for whom there are likely to be limited alternatives to a product based on BT’s WLR within the period covered by this review. These customer groups are set out above and include customers in off-net areas (6% of the residential segment), voice-only customers (17% of residential consumers with a fixed line in Q4 2013), and customers buying voice and broadband separately (26% of residential consumers with a fixed line). If these groups of residential customers were considered separately, 49% of the residential segment would have limited alternatives to WLR-based alternatives. In practice, there is likely to be some degree of overlap in these customer groups and the actual figure will be somewhat lower. Nonetheless, our indicative calculations suggest the total number of residential customers with limited alternatives to products based on WLR is likely to be high – around 46% of the residential segment\(^{123}\), which is equivalent to approximately 39% of the total WFAEL market.\(^{124}\)

3.134 In addition to these residential consumers, we also consider that many business users (15% of the WFAEL market in the UK excluding Hull) are likely to have limited alternatives to a product based on BT’s WLR within the period covered by this review. With regards to the business segment, we do not have as detailed evidence on usage and preferences as we have for the residential segment. Nonetheless, we consider there are likely to be barriers to switching for many of these users for the reasons set out in paragraphs 3.112 and 3.113 above. As a result, we consider that the total number of customers ultimately with no or limited alternatives to BT’s WLR is likely to be higher than our indicative (residential-focused) calculations suggest.

3.135 Overall we consider that a significant proportion of retail customers (more than 39% of the WFAEL market) would not have an alternative to services provided through BT’s WLR. Given the size of this group of customers, we consider that switching by consumers would not be sufficient to constrain a position of SMP.

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\(^{123}\) This estimate is based on the assumption that voice-only customers and customers buying voice and broadband separately are evenly distributed across areas within and outside the footprint.

\(^{124}\) This is based on the residential segment accounting for approximately 85% of the total WFAEL market in the UK excluding Hull in Q4 2013 (as set out above, business lines account for approximately 15% of all lines in Q4 2013).
Barriers to entry and expansion (particularly for MPF LLU CPs)

3.136 The market for the provision of wholesale fixed analogue exchange lines is characterised by high entry barriers, namely the costs of investing in an access network of a significant size. In order to foster entry in spite of these barriers, LLU was imposed as a remedy to allow access to the BT network infrastructure.

3.137 An LLU operator has to invest in electronic equipment to be installed at BT’s exchange. Since the investment required to support LLU is not negligible, a CP undertakes it only if there are expectations of acquiring a minimum number of customers. For this reason, LLU CPs have focused on the larger exchanges (the extent of LLU rollout is discussed in more detail as part of the 2014 WBA Statement125).

3.138 We have considered whether there are barriers to entry/expansion for MPF LLU CPs in terms of serving the groups of consumers we have identified as having a limited set of, or no, alternatives to WLR-based services. In particular:

- **customers outside the MPF LLU footprint**: as discussed in paragraph 3.116 onwards, we consider the decision to unbundle additional exchanges is unlikely to be affected even by a significant increase in the price of WLR. Therefore, we consider there are significant barriers to extend the MPF LLU footprint to these areas and therefore that such expansion is unlikely;

- **voice-only customers**: as set out in paragraph 3.57, typically it is not currently economic to use MPF to provide a voice-only service. The WLR charge would need to increase by a significant amount for a CP to be able to offer a voice-only retail product over MPF at a comparable price to CPs using WLR. As a result, we do not consider it likely that LLU CPs would begin supplying voice-only customers over MPF following an increase in the price of WLR; and

- **business customers**: as noted above, MPF LLU and cable together account for a significantly lower share of business exchange lines than residential. MPF LLU CPs and/or Virgin could increase their share of this sector by increasingly targeting business customers themselves or by selling wholesale inputs to CPs already serving business users. Alternatively, CPs already focused on the business sector could invest in building their own network. We consider all of these scenarios unlikely to have a material impact on the reliance of this sector on WLR in this review period. As set out in paragraph 3.112 to 3.113, there are in this review period features of this market segment which may limit the substitutability of a dual-play MPF-based service and which tend to make growth by CPs serving it slow. In addition, we consider that there are barriers to the wider use of wholesale inputs over MPF LLU or cable by third party CPs, as set out in paragraph 3.122 to 3.127. Finally we note that there has been some recent investment in LLU infrastructure intended for use in the business sector, notably by Virgin and by a new entrant, Zen. However, their impact on BT’s share of business users appears to have been limited to date. We therefore consider that there are material barriers to expansion in the business sector for this review period, even for CPs focused on this segment.

3.139 As a result of the above, we consider that significant entry or expansion by MPF LLU CPs or Virgin in the business segment is unlikely within the period covered by this review, and that the reliance of this customer group on products based on BT’s WLR is therefore likely to remain very high.  

Other factors

3.140 We have also considered two other factors in our assessment of competition in the WFAEL market, namely the existence of countervailing buyer power and prices.

3.141 As we have discussed previously (paragraphs 3.122 to 3.127), there are limited alternatives to BT’s WLR for current users, all of which require non-negligible investments by CPs in MPF LLU or an alternative access network. These circumstances make it unlikely that CPs hold countervailing buyer power sufficient to discipline BT’s market power, particularly in the short term.

3.142 The WLR charge is currently regulated and subject to a charge control remedy that sets an upper boundary to its level at £98.81 per year, £50.44 and £3.29 for rental, connection and transfers, respectively. Table 3.5 shows that BT has set its WLR prices at the maximum level allowed for every WLR service.

Table 3.5: WLR prices

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<th>Rentals</th>
<th>Connections</th>
<th>Transfers</th>
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<tbody>
<tr>
<td>12/13 ceiling</td>
<td>£98.81</td>
<td>£50.44</td>
<td>£3.29</td>
</tr>
<tr>
<td>12/13 price</td>
<td>£98.81</td>
<td>£50.44</td>
<td>£3.29</td>
</tr>
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Source: Openreach Price list and Ofcom, Charge control review for LLU and WLR services, 7 March 2012

3.143 BT’s pricing behaviour suggests that the competitive constraints on WLR are not sufficient to prevent it from pricing at the maximum level allowed when pricing uniformly. We consider, therefore, that the analysis of WLR prices does not contradict findings based on other factors discussed in the previous paragraphs.

Final conclusion on SMP in the UK excluding the Hull Area

3.144 For the reasons set out above, in particular BT’s high market share and the lack of sufficient competitive constraints on BT’s ability to raise WLR prices, we conclude that BT has SMP in the UK excluding the Hull Area.

Assessment of market power in the Hull Area

Market shares

3.145 In response to the July 2013 FAMR Consultation, KCOM stated that the current network deployment undertaken by MS3 in the Hull Area is more extensive than Ofcom had previously considered and has the potential to significantly impact

\[\text{\footnotesize \cite{126}}\] We consider that this is consistent with Vodafone’s arguments on barriers to entry in WFAEL, as summarised above.

KCOM's business over the period of this review, potentially in the residential market as well as the business market.\textsuperscript{128}

3.146 MS3 is a fibre network operator in the Hull Area.\textsuperscript{129} It has completed the first phase of its network deployment (with 33km of fibre in place) and has a stated intention to roll out a 200km fibre network within the next three years.\textsuperscript{130} MS3 has announced that its focus lies in providing services to \(\text{[X]}\) business customers, with some potential partners expressing an interest in delivering a service to residential customers.\textsuperscript{131}

3.147 As a result of this entry, we recognise there may be some reduction in KCOM’s market share of WFAELs within the period covered by this review. However, we consider that MS3 is unlikely to gain significant market share and thus exert a sufficiently strong competitive constraint such that KCOM ceases to enjoy SMP in the supply of WFAEL in the Hull Area during the period covered by this review. In particular:

- MS3 is only likely to account for a minority of customers in the Hull Area. MS3’s network went live with test customers in April 2013\textsuperscript{132}, and MS3 forecasts that by the end of this market review period it will have \(\text{[X]}\) business customers in 2016/17 \(\text{[X]}\). In October 2013, MS3 had \(\text{[X]}\) business customers\textsuperscript{133};
- the network will not cover all of the Hull Area and KCOM has already rolled out fibre to areas covered by MS3’s network;
- MS3’s business plan sets out its commercial strengths and weaknesses. \(\text{[X]}\)\textsuperscript{134}; and
- \(\text{[X]}\)\textsuperscript{135}

3.148 In summary, despite the entry of MS3, KCOM currently holds an almost 100\% share of the market for WFAELs. We consider that its market share is likely to remain very high during the period covered by this market review, which creates a clear presumption of SMP.

**Barriers to entry**

3.149 The barriers to entry in the wholesale fixed analogue exchange lines market in the Hull Area are similar to those discussed above in relation to the rest of the UK. Specifically, to enter the market in the Hull Area in any significant way a CP would need either to build a network to premises in the Hull Area, or to deploy a solution

\textsuperscript{128} P.3, KCOM response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/KCOM.pdf.
\textsuperscript{129} www.ms-3.co.uk/pages/about-us.
\textsuperscript{130} MS3, MS network officially live, 10 April 2013, www.ms-3.co.uk/articles/7.
\textsuperscript{131} MS3, MS3 expand with Garness Jones, 11 January 2013, www.ms-3.co.uk/articles/5; MS3 business plan, page 8, Provided on 27 November 2013 in MS3 response to questions 3 and 4 of the s.135 notice of 19 November 2013 (sent for the 2014 WBA Review).
\textsuperscript{132} ISPreview, Alternative MS3 Ultrafast Fibre Optic Network Goes Live in Hull UK, 11 April 2013, www.ispreview.co.uk/2013/04/ms3.
\textsuperscript{133} Response from MS3 to question 4 of the s.135 notice of 19 November 2013 (send to the 2014 WBA Review).
\textsuperscript{134} MS3 business plan, page 9. Provided on 27 November 2013 in MS3 response to questions 3 and 4 of the s.135 notice of 19 November 2013 (sent for the 2014 WBA Review).
\textsuperscript{135} Ibid.
based on MPF LLU within the Hull Area. Both solutions would require a provider to make a significant investment. In this respect we note that the Hull Area has a relatively small population and, particularly in competition with an incumbent, another CP would find it challenging to gain market share rapidly. When set against the systems integration and the large outlay in infrastructure costs that would be required to enter the market, there is a large structural barrier to entry.

3.150 To date, no supplier has approached KCOM to request MPF LLU. While MS3 is in the process of deploying an alternative access network, we consider that it is unlikely to significantly affect the competitive conditions in the supply of WFAEL in the Hull Area during the period covered by this review, for the reasons described above. As a result, we consider the barriers to entering on a sufficient scale such as to have a material effect on KCOM’s market share remain high.

Other criteria

3.151 While the relevant WFAEL market in the Hull Area is much smaller than in the rest of the UK, the assessment of the other SMP criteria as applied above to BT in the rest of the UK apply equally to KCOM and the Hull Area. This suggests that KCOM would not be constrained in its pricing of this service.

3.152 Overall we consider that KCOM’s market share is strong evidence of SMP and that there are no features of the market that would negate that presumption of SMP. We also do not envisage material changes in the WFAEL market during the period of this review.

Final conclusion on SMP in the Hull Area

3.153 On the basis of the above considerations, we conclude that KCOM still has SMP in the WFAEL market in the Hull Area.
Section 4

Market definition and SMP analysis: ISDN30

Introduction

4.1 In this section we set out our market definition and our assessment of market power in relation to the provision of ISDN30. The reasoning for carrying out a market definition and market power assessment, including our general approach to doing so, is set out in Annex 3. In approaching our assessment of market definition for the ISDN30 market, we have taken utmost account of the guidance on market definition in the EC SMP Guidelines. As in previous market reviews, the impact of IP-based services on ISDN30 is of particular importance.

4.2 This section is structured as follows:

• we summarise our position in the market review concluded in 2010 and our subsequent no material change assessment, which concluded in 2012;

• we define the relevant retail markets, taking into account stakeholder responses to the July 2013 FAMR Consultation;

• we define the relevant wholesale markets, taking into account stakeholder responses to the July 2013 FAMR Consultation;

• we explain why our approach to ISDN30 is consistent with the Relevant Markets Recommendation; and

• we set out our assessment of wholesale market power, taking into account stakeholder responses to the July 2013 FAMR Consultation.

4.3 In summary, we conclude that a market definition based only on ISDN30 exchange lines at both the retail and wholesale levels remains appropriate. IP-based services such as SIP Trunking are growing and becoming increasingly important, but we consider these do not yet pose a sufficiently strong constraint on the supply of ISDN30 to warrant inclusion in the market.

4.4 In our wholesale market power assessments we conclude that:

• BT holds SMP in the provision of wholesale ISDN30 exchange line services in the UK excluding the Hull Area; and

• KCOM holds SMP in the provision of wholesale ISDN30 exchange line services in the Hull Area.

136 In the 2010 ISDN30 Statement, we found the ISDN30 retail market in the UK excluding the Hull Area to be effectively competitive. Consequently, we are not reviewing this market as part of this market review. In the 2010 ISDN30 Statement, we did however find that KCOM has SMP in the ISDN30 retail market in the Hull Area; we consider the provision of retail ISDN30 exchange line services in the Hull Area in Section 6.
Position in the previous market review

4.5 As demand for wholesale ISDN30 exchange lines is derived from demand at the retail level, we first considered the retail market. In the 2010 ISDN30 Statement, our conclusions on retail market definition were as follows:

- analogue access, ISDN2 and ISDN30 each lie in separate markets;
- leased lines are not a direct substitute for ISDN30;
- IP-based services (SIP Trunking in particular) are in a separate market; and
- there are two separate geographic markets: the UK excluding the Hull Area, and the Hull Area.

4.6 When considering the wholesale market for ISDN30 we determined that there were no direct demand-side constraints on wholesale ISDN30 exchange lines, while supply-side substitution was neither feasible nor likely. At the wholesale level there remained two separate geographic markets: the UK excluding the Hull Area, and the Hull Area.

4.7 In the 2010 ISDN30 Statement we found that BT had SMP in the supply of wholesale ISDN30 exchange services in the UK excluding the Hull Area. In support of this finding we noted that:

- BT’s market share was high;
- demand and supply-side substitution was limited;
- BT’s reported profitability was significantly in excess of its cost of capital. We believed that this was prima facie evidence that wholesale charges for ISDN30 might be above the competitive level; and
- there was little incentive for other CPs to offer services at the wholesale level to third party resellers.

4.8 In the 2010 ISDN30 Statement we determined that KCOM held SMP in the supply of wholesale ISDN30 exchange services in the Hull Area. It had a market share of almost 100%. There also appeared to be little appetite among competing CPs to enter the market, possibly due to high barriers to entry.

4.9 In relation to the retail level, we found that no CP had SMP in the retail ISDN30 market in the UK excluding the Hull Area. However, for the Hull Area, we found that KCOM had SMP.

4.10 In our assessment for the 2012 ISDN30 Charge Control Statement, we were satisfied that at that time there had been no material change in the wholesale ISDN30

**Retail market definition**

4.11 We define the retail market at this stage for the purpose of informing our analysis of indirect constraints when defining the wholesale market. In addition, the retail market discussion set out below provides a frame of reference for the assessment of the retail market for ISDN30 in the Hull area, which is discussed in Section 6.

**Provisional conclusion as set out in the July 2013 FAMR Consultation**

4.12 In the July 2013 FAMR Consultation, our provisional conclusion was that, for the period of this market review, a market definition based on ISDN30 is still appropriate. We considered that ISDN2, analogue exchange lines and leased lines are unlikely to be close substitutes on either the demand-side or supply-side for ISDN30, and therefore were not included within the relevant market during this market review period.

4.13 We also provisionally concluded that there remain two geographically distinct ISDN30 retail markets for the provision of:

- Retail ISDN30 exchange line services in the UK excluding the Hull Area; and
- Retail ISDN30 exchange line services in the Hull Area.

**Stakeholder responses to the July 2013 FAMR Consultation**

4.14 No stakeholders commented on our provisional conclusion for retail ISDN30 market definition as set out in the July 2013 FAMR Consultation. However, since retail market definition affects both wholesale market definition and the assessment of SMP, stakeholders’ responses on these issues (see paragraphs 4.74 and 4.96 to 4.99) are relevant.

**Product market definition**

4.15 As the starting point for the product market definition exercise, we have taken ISDN30 as the focal product. This is consistent with the approach adopted in the 2010 ISDN30 Statement. Taking this focal product at the retail level is consistent with the focal product we use at the wholesale level (see paragraph 4.77 below). Looking at both the demand- and supply-side, we have then considered whether the retail price of ISDN30 is constrained by a variety of potential substitutes.

4.16 The potential substitutes we have identified at the retail level for ISDN30 exchange line services are as follows:

- analogue exchange lines;
- ISDN2;
4.17 We consider these potential substitutes in turn below, first considering them on the demand side. We then consider the potential for price discrimination, in particular targeting any price rises at ISDN30 consumers that are unlikely to switch. We also discuss the potential for supply-side substitution looking, amongst other things, at the functionality and technical characteristics of these various services, before setting out our conclusions. We have focused, in particular, on the scope for IP-based services to constrain ISDN30 prices, consistent with our understanding of market developments and stakeholder responses to the July 2013 FAMR Consultation.

Assessment of demand-side substitutability: analogue exchange lines and ISDN2

4.18 We consider that analogue exchange lines and ISDN2 are unlikely to constrain ISDN30 prices, consistent with our findings in previous reviews.\(^{138}\)

4.19 The characteristics of ISDN2 and analogue exchange lines significantly differ from those of ISDN30:

- an analogue exchange line provides a single analogue channel that can support traditional telephony, facsimile and modem data traffic, without guarantees on data throughput (speed);
- ISDN2 is a narrowband access service operating over an analogue exchange line that was designed to provide two digital 64kbit/s channels supporting traditional telephony, facsimile and data with a guaranteed transmission rate (speed); and
- in contrast, ISDN30 is an access service designed to cater for larger business sites. ISDN30 supports up to 30 narrowband 64kbit/s channels and is used most commonly to provide multiple telephone lines to private branch exchanges (‘PBXs’). It is generally accepted that the entry level for ISDN30 is 8 channels, and charges are set generally on a per channel basis above this level.\(^{139}\) In September 2011, [\(\_]\) and [\(\_]\] informed us that, on average, their customers used 28-30 ISDN30 channels per partial private circuit (‘PPC’) bearer.\(^{140}\) In other words, ISDN30 customers typically use almost the maximum available number of channels for each ISDN30 exchange line. ISDN30 and ISDN2 also supports a wider range of supplementary services than analogue lines, for example Digital Select Services and Direct Dial In (‘DDI’).

4.20 In the light of these functional differences, we consider that substitution to analogue exchange lines or ISDN2 would not prevent a hypothetical monopolist raising the retail price of ISDN30 above the competitive level by a small but significant amount:


\(^{139}\) www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=WH17ucyC%2Fy7E1PoECWJLs3T0E4HidA8NS2h%2Bn9fuuQIlMnGHsqdC0vzoO163bJmh34D91D7M0q0u%2F%0AliSgttFAKw%3D%3D.

\(^{140}\) [\(\_]\] We have no evidence to suggest that this has changed since September 2011.
• a significant level of substitution to analogue exchange lines is unlikely because although the retail prices of ISDN30 (on a per channel basis) and analogue exchange lines are similar, ISDN offers extra functionalities, such as Digital Select Services and DDI; and

• while BT currently charges a slightly lower retail price per channel for ISDN30 than ISDN2, consumers incur a significant connection charge if they switch from ISDN2 to ISDN30. This suggests that the number of customers that may find it cost-effective to substitute between ISDN30 and ISDN2 is unlikely to be large enough to act as a competitive constraint on the price of ISDN30.

Assessment of demand-side substitutability: Leased Lines

4.21 There are fundamental differences in the characteristics of ISDN30 and leased line services. An ISDN30 service consists of two components – a bearer service that connects the customer premise to the exchange, and the call control/switching functions provided by the exchange. In contrast, a leased line only consists of the bearer service and would require additional equipment to gain the functionality of ISDN30 services. Further, we note that the price of leased lines is significantly higher than for ISDN30. As a result we do not consider leased lines are likely to constrain retail ISDN30 prices from a demand-side perspective (we discuss supply-side substitution below).

Assessment of demand-side substitutability: IP-based services

4.22 IP-based telephony services are services for the exchange of information primarily in the form of speech that uses the Internet Protocol ("IP"). In considering the potential to constrain ISDN30 prices, we discuss two main types of IP-based technologies:

• Hosted VoIP/IP Centrex; and

• SIP Trunking.

4.23 Our assessment of the extent to which IP-based services constrain the price of ISDN30 is structured as follows.

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141 As of 17 March 2014, BT charged £24.14 excl. VAT per channel per month for ISDN30 on a 1 year contract including DDI quota (£21.15 excl. VAT per channel per month for ISDN30 on a 1 year contract excluding DDI quota), and £19.00 excl. VAT per month for a standard business phone line on a 12 months contract. ISDN30 price taken from www.business.bt.com/phone-services/isdn/pricing/ and standard business line price taken from www.business.bt.com/phone-services/business-phone-lines/.

142 BT currently is pricing basic ISDN2 at £21.55 excl. VAT per channel per month (on a 1 year contract) and ISDN30 (without DDI quota) at £21.15 excl. VAT per channel per month (on a 1 year contract). ISDN2 requires a minimum of 2 channels, and ISDN30 requires a minimum of 8 channels. BT is currently charging a connection fee of £336.00 excl. VAT per two ISDN2 channels and £136.50 excl. VAT per ISDN30 channel (this price is charged for the first 15 channels and then £33.60 excl. VAT per channel for any subsequent channel). Prices correct as of 17 March 2014, see www.business.bt.com/phone-services/isdn/pricing/.

4.24 First, we set out some background evidence in relation to ISDN30 and IP-based services:

- description of IP-based services;
- 2010 survey evidence;
- historic volume trends for ISDN30 and IP-based services; and
- main drivers of the trends in volumes.

4.25 Second, we discuss the three main barriers to switching from ISDN30 to IP-based services that we have identified, based on information from end-users and our understanding of the market: 144

- costs of switching;
- concerns about quality and reliability; and
- functionality differences and standards.

4.26 Finally we set out our conclusions.

Description of IP-based services

4.27 IP Centrex, also known as Hosted VoIP, is an IP-based exchange line service that includes the functionality of a PBX within the CP’s network rather than at the consumer’s premises. This enables businesses to have the call management features of a PBX such as extension numbering and inter-extension calling without the need to buy or operate a PBX. It is generally used to describe services provided to small sites that are accessed via an ordinary broadband internet connection.

4.28 The key functional difference between Hosted VoIP services and ISDN30 (and SIP Trunking) is that, in addition to the exchange line functionality, Hosted VoIP services incorporate the functionality of a PBX. This reduces the capital expenditure for any company wishing to take up a multi-user telephony service. However, lack of an onsite PBX may be unattractive for some companies because it means user control is further from the customer site and some companies may have concerns over security. Hosted VoIP would therefore only be a substitute for ISDN30 for businesses that are prepared to use a managed network based service for PBX functionality as an alternative to an onsite PBX.

4.29 SIP Trunking is a communications service that uses the SIP protocol for voice and data transmissions. SIP Trunking services are generally multi-line services that are used to provide exchange line services to modern IP PBXs that support this type of interface.

4.30 As SIP Trunking uses a PBX based at the customer site, it is a closer functional substitute for ISDN30 than Hosted VoIP services, which do not involve a PBX at the

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144 In the 2010 ISDN30 Consultation, we noted that the majority (86% of those surveyed) of ISDN30 users were aware of IP-based services. This is likely to have grown since then so we consider that a lack of awareness is unlikely to be a barrier to switching.
consumer’s premises (as discussed above). For companies that want an on-site PBX (for example to retain greater user control or for security reasons), SIP Trunking could be used to replace ISDN30 in a way that Hosted VoIP could not.

4.31 In practice, the dividing line between ISDN30 and SIP Trunking may not be clear cut since some CPs (such as TalkTalk) are now offering an alternative to ISDN30 which supports IP-based telephony.\(^{145}\) We consider that this service differs from a traditional ISDN30 exchange line service as it requires a gateway to be used in order for a traditional PBX to communicate with TalkTalk’s fibre network (the trunk side is based on SIP Trunks over Ethernet First Mile (‘EFM’)). Therefore we treat this in the same way as IP-based services in our analysis.

2010 survey evidence

4.32 As part of the analysis for the 2010 ISDN30 Statement, we conducted a survey of ISDN30 and IP-based services users (the 2010 ISDN30 Survey).\(^{146}\) The purpose of this survey was to assess why businesses use ISDN30 services, gauge how much longer they are likely to continue to use ISDN30 services, explore whether IP-based technologies are regarded as a valid substitute for ISDN30 services and understand the experience of businesses which have already migrated from ISDN30 to IP-based services. We placed significant weight on the results of the 2010 ISDN30 Survey in our conclusions on market definition in 2010.

4.33 As part of the July 2013 FAMR Consultation, we considered whether it was necessary to conduct a new, full survey of ISDN30 and IP-based users. To help us determine whether a new survey was necessary, we contacted a small number (40) of businesses using ISDN30 and IP-based services and asked a small number of questions focusing on the important characteristics of these services and on users’ preferences over switching. We received 12 responses, predominantly from larger users of these services – respondents included major financial institutions and a large public sector organisation. While we do not seek to use these responses as a representative and statistically robust survey, they nonetheless provide an indication of whether the results of the 2010 ISDN30 Survey are still likely to be valid. For example, if the businesses we contacted in 2013 had given a substantially different result to respondents to the 2010 ISDN Survey then this might have suggested that a new full survey was appropriate. Moreover, we are able to rely on up to date information on actual choices made by businesses (see the discussion below on actual volumes for ISDN30 and IP-based services).

4.34 The businesses we contacted raised broadly similar points to the 2010 ISDN30 Survey. For example:

- SIP Trunking and Hosted VoIP were the most cited alternatives to ISDN30;

- ISDN30 users continue to value ISDN30 for its reliability and quality of service, but they do not currently rate IP-based services as highly for reliability or resilience; and

\(^{145}\) [www.talktalkbusiness.co.uk/test/isdn30](http://www.talktalkbusiness.co.uk/test/isdn30).

• reduced costs are a key consideration in a decision to switch to IP-based services, but there are several other important characteristics of the services which are also taken into account.

4.35 We thus consider that it is appropriate to continue to rely on the results of the 2010 ISDN30 Survey, since they are likely to remain broadly accurate. We did not receive any responses to the July 2013 FAMR Consultation which challenged this position.

**Volume trends for ISDN30 and IP-based services**

4.36 Over the last few years there has been a trend away from ISDN30 towards IP-based services and, in particular, towards SIP Trunking. However, the decline in ISDN30 has been very gradual as shown by the graph in Figure 4.1 below.\(^{147}\) Over the period covering June 2010 to December 2013, volumes declined by approximately 15% (this is equivalent to an annual decline of around 4%).\(^ {148}\)

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\(^{147}\) We produced this graph by summing wholesale ISDN30 volumes from BT, Vodafone, TalkTalk, Verizon and Virgin. We believe that these CPs are likely to account for the vast majority of wholesale ISDN30 volumes. We have noted an adjustment we have made to this chart in footnote 148 below in response to a discontinuity identified in one CP’s volume data. We also had some concerns over the accuracy of the data submitted by one CP – the ISDN30 volumes it submitted for the purposes of this review were of a different order of magnitude to those that same CP submitted for the 2012 Charge Control Statement. We attempted to address this issue with the CP, but our concerns remain and so we have decided to exclude the volumes submitted by this CP. We do not consider this to significantly affect the inferences we draw from the data as this CP only comprised a small proportion of the market. We do not present volumes from before June 2010 because, when gathering ISDN30 data for the 2012 ISDN30 Price Control Statement, we were informed by a large CP that volumes before this date were not comparable with those after (See note to Table A5.2 in Annex 5 of Ofcom, *Wholesale ISDN30 charge control*, 12 April 2012, [http://stakeholders.ofcom.org.uk/binaries/consultations/isdn30-price-control/statement/ISDN30_final_statement.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/isdn30-price-control/statement/ISDN30_final_statement.pdf)). Hence we consider volumes post June 2010 to be the most reliable. In addition, following an update of stakeholders’ responses to the s.135 notices of 26 November 2012 in response to the s.135 notices of 12 February 2014, one CP has cast doubt on the estimates of the ISDN30 volumes provided in its original response. As a result, it provided new ISDN30 volumes (both actuals and forecasts) which it believes to be more accurate. We do not consider that this affects the conclusions that we draw from the data, however it does result in a slight change in the total historic ISDN30 volumes as reported in the July 2013 FAMR Consultation.

\(^{148}\) One CP identified an error near the end of 2011 in their system for recording service volumes, which meant that volumes were not being reported correctly for a time. This was thought to have occurred at some point after June 2010 and was calculated to have resulted in the omission of approximately channels. These channels were subsequently included in the volume data for September 2011, but this large addition caused an apparent discontinuity in the data at September 2011. To rectify this, we have presented the volumes which we are most confident are accurate given what we have been told by the CP in question about the nature of the discontinuity identified – June 2010, and September 2011 onwards. Between June 2010 and September 2011 we assume a linear decline. This seems reasonable since the channel discrepancy is believed to have occurred between these two dates, but neither Ofcom nor know precisely when. Again, we do not consider this has any material effect on the inferences we draw from the data.
In November 2012, we asked CPs to provide us with forecasts of ISDN30 volumes covering the period of this market review; these forecasts were updated in February 2014. These forecasts suggest that the decline in ISDN30 volumes is expected to accelerate over the review period (an average annual decline of 9%) – see Figure 4.2 below. However even this accelerated rate of decline would still mean that a significant ISDN30 user base will remain at the end of the period under review (approximately 1.8 million channels).

Source: Responses to the s.135 notices of 12 November 2012 from BT, Vodafone, TalkTalk, Verizon and Virgin, updated in response to the s.135 notices of 12 February 2014

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Figure 4.1: Historic Wholesale ISDN30 volumes (channels)

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149 We produced this chart by combining forecasts of wholesale ISDN30 volumes from BT, Vodafone, TalkTalk, Verizon and Virgin.
4.38 We have treated the forecast volumes shown in Figure 4.2 with caution, given the likely difficulties in estimating the rate at which customers are switching away from ISDN30 services. These difficulties are illustrated by the experience over the last few years. As part of the 2010 ISDN30 market review we asked BT (the largest wholesale ISDN30 provider) for forecasts of its ISDN30 volumes. In 2009, BT forecast that its ISDN30 volumes would decline by 40% over the period between June 2010 and December 2013. This is much greater than both the 15% decline in total ISDN30 volumes and the 12% decline in BT’s wholesale volumes that actually occurred over this period.

4.39 In Figure 4.3 and Figure 4.4 below we present evidence of the growth in volumes of IP-based services, provided by Illume Research. Both SIP/IP Trunking and Hosted VoIP have shown strong growth over the past 4-6 years, albeit from a fairly low starting base. We also note that for both SIP/IP Trunking and Hosted VoIP the total volume of channels remains relatively low in comparison to that of ISDN30.

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150 BT response to question 1 of the s.135 notice of 20 November 2009.
151 Illume Research told us that their dataset consists of all IP Trunks including SIP (accounting for the majority of IP Trunks), IAX and H.323. We refer to the Illume Research report for an understanding of the broad growth trends of IP-based services, and use its data to assess an upper bound for the extent of the constraint that IP-based services may exert as part of our SMP assessment.
Figure 4.3: SIP/IP Trunk volumes

Source: Illume Research

Figure 4.4: Hosted VoIP volumes

Source: Illume Research
4.40 We have compared the trends in wholesale ISDN2 and ISDN30 volumes against the trends in SIP/IP Trunk volumes and Hosted VoIP volumes.\textsuperscript{152} Considering ISDN services as a whole, the growth in IP-based services in absolute terms is still greater than total ISDN decline. Over the period from June 2010 to December 2013, SIP/IP Trunk volumes grew by approximately 920,000 trunks and Hosted VoIP volumes grew by approximately 810,000 (units are equivalent to 1 ISDN channel) – roughly 1.7 million in total. In comparison ISDN30 volumes declined by about 420,000 and ISDN2 volumes declined by about 140,000 – only around 560,000 channels in total.\textsuperscript{153} This may be as a result of transitional dual running of services and growth in other uses of IP-based services. This disparity in rates of growth and decline of the respective services suggests that there is not a one-to-one relationship, and therefore we cannot assume that the growth of IP volumes results purely from the switching behaviour of ISDN customers.

4.41 We collected IP-based services volume data from five providers of wholesale ISDN30 and note that they forecast continuing strong growth during the period of this market review.\textsuperscript{154} However, we have not aggregated the volume data from these five providers in order to forecast overall growth in IP-based services. This is because there is a large number of other providers of IP-based services and the market is much more fragmented than that of ISDN30, with 50+ providers of IP Trunking services currently operating.\textsuperscript{155}

4.42 In summary, ISDN30 volumes are in gradual decline and while this decline is likely to continue, there is uncertainty about the rate. In contrast, IP-based services are growing. We discuss below the drivers behind these trends.

**Main drivers of the trends in volumes**

4.43 In this sub-section we describe the potential drivers of the trend identified above, highlighting what may be the reasons for the relatively slow switching by end-users to IP-based services. We then go on to describe the barriers to switching in more detail.

4.44 IP-based services are generally promoted as a cheaper alternative to ISDN30, at least in terms of the ongoing costs.

4.45 The costs of switching to IP-based services vary between the types of service and are dependent on the functionality of the customers’ current equipment. Costs will differ between a Hosted VoIP service, where no PBX is required, and SIP Trunking services where users must have an IP enabled PBX (IP-PBX). However, Illume Research noted that for most of the PBX packages offered on the market, 40-50% of the cost of the package was comprised of the cost of the IP handsets.\textsuperscript{156} As IP

\textsuperscript{152} We have included ISDN2 volumes in this comparison as IP-based services are also considered to be the most likely alternative service for a business considering switching away from ISDN2. As a result we expect that growth in IP volumes will be contributed to by both ISDN2 and ISDN30 users switching to IP-based services.

\textsuperscript{153} Wholesale ISDN30 channel volumes received by BT, Vodafone, TalkTalk, Verizon and Virgin in response to question 3.3 of the s.135 notices of 26 November 2012. Wholesale ISDN2 channel volumes received from BT in response to question 3.2 of the s.135 notice of 26 November 2012. Both sets of figures were updated in responses to the s.135 notices of 12 February 2014. SIP/IP Trunk and Hosted VoIP Volumes were provided by Illume Research in March 2014.

\textsuperscript{154} Responses from BT, Vodafone, TalkTalk, Verizon and Virgin to question 3.3 of the s.135 notices of 26 November 2012, updated in responses to the s.135 notice of 12 February 2014.

handsets are required for all IP-based services this cost would apply to both Hosted VoIP and SIP Trunking, with the remaining 50-60% of the package cost (actual PBX unit cost) applying only to SIP Trunking. The consequence of this is that even though Hosted VoIP requires less equipment, there is still a not insignificant amount of expenditure required if a customer switches from ISDN30.

4.46 However, costs are unlikely to be the only consideration in a decision to switch. The end-users we contacted suggested that while reduced costs are an important reason for switching, several other factors also feature highly in the decision. These relate to service flexibility, reliability, resilience, security and functionality.

4.47 The main benefit of a Hosted VoIP service is the same as for IP-based services more generally – IP-based services are much more flexible than a traditional ISDN30 line. For example, the bandwidth used by an IP-based service can be switched between various uses very quickly and easily. A common requirement for some businesses is to sacrifice some data capacity in order to support more voice lines. This means additional uses can be added in minutes, rather than the more complicated process which would be required to do the same with an ISDN30 line.

4.48 Like Hosted VoIP services, SIP Trunking has benefits in comparison to ISDN30, especially in terms of greater flexibility. CPs have promoted the benefits of additional flexibility in terms of scalability and numbering configuration compared to ISDN30. Trunk aggregation also enables a customer to reduce the number of channels required for a given traffic level. In some cases firms may already have spare capacity on their data service, so additional voice channels can be added quickly and without additional cost.

4.49 Most respondents to the end-user questionnaire conducted for this review who were considering switching to IP-based services from ISDN30 were planning to do so in either the 1-3 years or 3+ years timeframe (rather than within a period of less than a year). This suggests that we should be cautious about inferring that switching to IP-based services is imminent and likely. Those respondents that had already switched had only done so recently (within the last 6-12 months). This highlights that although IP-based services have been in existence for a while, it is only more recently that firms have begun to adopt them.

Costs of switching to IP-based services

4.50 As we noted in our 2010 ISDN30 Statement, SIP Trunking services are generally promoted as a cheaper alternative to ISDN30. Most of the end-users we contacted supported the view that consumers see the reduced cost of IP-based services as an incentive to switch. However the business case for switching depends in part on the size of the upfront costs of switching (such as new equipment, training for technical employees), as well as any ongoing cost savings associated with running an IP-based service.

4.51 The financial business case for switching can be dependent on a firm’s technological lifecycle and is ‘event driven’ to some extent, in the sense of it being economic to upgrade to IP-based services when current equipment is changed. Illume Research noted in its report on SIP/IP Trunking that the working lifecycle of a PBX can be up to 11 years (although the average is closer to 7 years). This suggests that the business case for switching could become stronger for businesses with older equipment. In the
2010 ISDN30 Consultation we found that a significant minority of users surveyed did not have an IP enabled PBX, and that users tended to replace their PBXs less than every 5 years.\(^\text{157}\) However, gateways can provide an intermediate step for users who currently do not own an IP-enabled PBX, as these allow a traditional (not IP-enabled) PBX to communicate with an IP network.\(^\text{158}\) There is an additional cost of gateways, so this upgrade path would not be without capital expenditure.

4.52 It is plausible that the costs of switching to an IP-based service are falling over time. We note that Illume Research stated in its report on SIP/IP Trunking that penetration of IP-PBX has been strong for large enterprise customers, but a lot slower for small and medium sized enterprises (although this trend is changing).\(^\text{159}\)

4.53 Our end-user questionnaire highlighted that while a number of the drivers for switching were generic across businesses, in many cases there were also business-specific reasons. For example:

- [X] noted that it switched to IP-based services as it had a number of [X] sites for which the cost was favourable. It then established a commercial deal in combination with its existing sites such that it was still lower cost in total to switch to IP; and

- a government organisation [X] stated that the most significant practical issue to switching was the short term cost and impact of significant change to existing infrastructure. It noted that its current industry partner recognised this and proposed IP-based services for new sites, buildings or complete refurbishments.

**Concerns about quality and reliability of IP-based services**

4.54 As well as cost, another key consideration for consumers is reliability and quality of service. This is consistent with what the consumers of ISDN30 and IP-based services told us for this review, and also with the 2010 ISDN30 Survey. In particular, a government organisation [X] responded saying all characteristics listed were important\(^\text{160}\), but that security, reliability and price were most important. We asked the ISDN30 end-users we contacted how they perceived IP-services relative to ISDN30 in terms of a number of characteristics. Overall, respondents considered ISDN30 superior to IP-based services for both reliability and resilience. However IP-based services were rated superior for quality of service.

4.55 Some consumers use both ISDN30 and IP-based services in combination. This may be due to a number of reasons, including additional functionality, concerns over reliability/resilience and/or as part of a transition to IP-based services. The responses we received from the end-users we contacted suggested that the main reason for this ‘dual running’ was for resilience. In the 2010 ISDN30 Survey, 41% of IP-based service users who had migrated from ISDN30 had retained at least some of their

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\(^\text{158}\) A gateway is a node that allows entrance into a network.


\(^\text{160}\) Our latest end-user questionnaire had multiple choice questions; under the question relating to important characteristics we listed the following options: ‘Quality of service’, ‘reliability’, ‘resilience’, ‘security’, ‘price’, ‘functionality’ and ‘other (please specify)’.
ISDN30 services (either as a supplementary or a back up service). By way of comparison, 13% of all ISDN30 users also use IP-based services, i.e. ISDN30 users that had migrated to IP-based services were disproportionately likely to use both ISDN30 and IP-based services. This might reflect the perceived quality/reliability differential between IP-based services and ISDN30.\(^\text{161}\) The 2010 ISDN30 Survey also noted that of those users who had trialled IP-based services, less than half had proceeded with implementing the service, and about a third mentioned quality of service and reliability issues.\(^\text{162}\)

4.56 We understand that the concerns about reliability of IP-based services may have stemmed from a lack of low cost, high quality access capacity for these services. This has meant that firms may have used IP-based services in the past which used bearer capacity without quality of service guarantees, and this has lead to concerns over reliability. This is particularly likely to have been the case for smaller business users which may have used a digital subscriber line (‘DSL’) as the bearer, whereas larger businesses might have less concern due to use of leased lines which already feature stringent quality of service guarantees. However, our understanding is that the introduction of EFM and FTTC may be reducing these concerns as these offer low cost access with improved service quality guarantees.\(^\text{163}\)

**Functionality differences and standards**

4.57 Other key factors affecting take-up of Hosted VoIP services have tended to involve numbering and porting. We understand that this is predominately a result of a large number of Hosted VoIP providers having yet to establish the agreements, processes and systems to enable porting of numbers.\(^\text{164}\)

4.58 Furthermore, the coexistence of multiple VoIP communications protocols, some of which are standards based (e.g. IETF’s SIP, ITU’s H.323) and others being proprietary (e.g. IAX2), means that not all equipment is interoperable. As a result, users may be worried they might in the future be forced to upgrade equipment before the end of its lifecycle and this may dissuade some users from switching to IP-based services.

**Conclusion on IP-based services**

4.59 Based on the evidence set out above in paragraphs 4.36 to 4.42 we recognise that IP-based services are growing and we expect that this growth will continue during the period of this review. However, current evidence suggests that, while functionally IP-based services can offer almost the same features as ISDN30 (and in some cases additional features), there remain barriers to switching for many ISDN30 users. Firms that do not need to replace their current equipment in the near future incur an additional cost of switching to IP-based services. Concerns over reliability and quality of service, while reducing over time, still appear to remain.

4.60 We also note that the volume decline in ISDN30 has not been that significant in the period since the last review. While further decline is forecast, we consider the rate at

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\(^\text{162}\) Paragraph 4.52, ibid.

\(^\text{163}\) Illume Research confirmed that this was the case on 18 June 2013.

which ISDN30 will decline is uncertain. We consider that this uncertainty is highlighted by the extent to which BT overestimated the rate at which ISDN30 would decline when we reviewed this market for the 2010 ISDN30 Statement. Moreover, CPs predict a substantial user base will still remain on ISDN30 at the end of the current market review period.

4.61 Therefore, while we accept that there is a degree of substitutability with IP-based services and that this may be increasing over time, we do not consider that the constraint from IP-based services is likely to be sufficiently strong within the forward look period of this review to warrant the inclusion of these services within the relevant market from a demand-side perspective.

The potential for price discrimination

4.62 BT is currently required to provide wholesale ISDN30 access at a regulated price. This means that if BT charged higher retail ISDN30 prices to consumers who are not well placed to switch to IP-based services, it could be undermined by those consumers switching to other ISDN30 retailers (who buy ISDN30 at the wholesale level from BT).

4.63 However, absent regulation at the wholesale level, it is likely that BT would not choose to provide wholesale products to third party CPs on reasonable terms.\(^{165}\) Although Vodafone and Virgin could retail ISDN30 services on their networks, many of the other retailers that currently rely on access to BT’s network might either be absent or less able to compete against BT’s retail pricing. Thus, absent regulation at the wholesale level, BT is likely to find it more feasible to price discriminate between its retail ISDN30 customers. In particular, it could increase prices for those consumers who were unlikely or unable to switch, and offer reduced prices to those considering switching to alternative technologies. Such retail price discrimination likely mitigates the extent to which consumers switch to alternative products. In particular, it seems plausible that BT – as a longstanding ISDN30 provider – has sufficient knowledge of its customer base to engage in such activity.

Assessment of supply-side substitution

4.64 We do not consider that supply-side substitution would prevent a hypothetical monopolist of retail ISDN30 services from profitably increasing its retail prices by a small but significant amount:

- it would be possible for CPs providing analogue exchange lines, ISDN2, services over LLU or leased lines to upgrade their networks to offer ISDN30 services. However, this would require significant sunk investment to provide the necessary functionality and to undertake the necessary updates to operational support systems. Given that the ISDN30 market is forecast to decline, such investments are unlikely to be economically viable particularly given the limited time period over which sunk costs could be recovered, and the fact that adding to capacity in a market forecast to decline is likely to lead to a fall in the retail prices over the period of the investment; and

\(^{165}\) This scenario is relevant to the issue of wholesale market definition (as explained in Annex 3, the extent of substitutability at the retail level determines the extent of indirect constraints). When defining wholesale ISDN30 markets it is appropriate to consider the position absent the presence of SMP remedies at the wholesale level (this reflects the application of the modified Greenfield approach, which is described in Annex 3).
• as discussed above, IP-based services such as SIP Trunking are being offered by CPs as alternatives to ISDN30. It seems likely that CPs would concentrate their efforts on promoting their IP-based services as alternatives to ISDN30 rather than providing ISDN30 services (particularly as IP-based alternatives are seen as the successor product to ISDN30).

Conclusion on retail product market definition

4.65 Our view is that, for the period of this market review, a market definition based on ISDN30 only is still appropriate. In particular, as explained above, we consider that ISDN2, analogue exchange lines and leased lines are unlikely to be close substitutes on either the demand-side or supply-side for ISDN30. Supply-side substitutability is unlikely to exert a significant constraint. We believe that there is a degree of substitutability with IP-based services and that this is likely to increase over time but do not consider that it is sufficiently strong to warrant the inclusion of these services within the relevant market during this market review period.

4.66 The market definition exercise is generally performed assuming prices are at the competitive level. Where actual prices are above that level then the available evidence may overstate the degree of substitutability, since those high prices make alternative products appear more attractive. This is explained further in Annex 3.

4.67 In May 2012, a price control came into effect to reduce the wholesale ISDN30 price by a significant amount (the main control was RPI-13.5%) by 2013/14. Over the charge control period prices decline in line with a glide path (in order to most closely approximate the workings of a competitive market, where profits are gradually eroded). This suggests that ISDN30 prices before 2013/14 may be elevated and thus evidence before this period may therefore overstate the degree to which other products are effective substitutes for ISDN30. Put another way, the modest decline in ISDN30 volumes and limited evidence of substitutability that we identify above occurred despite ISDN30 prices potentially being above the competitive level during the most recent period.

Geographic market

4.68 In 2010 we found that:

• The Hull Area was distinct from the rest of the UK due to KCOM facing little competition in the supply of ISDN30 (no cable, LLU or WLR). There was no effective demand-side substitution, and supply-side substitution from the rest of the UK was limited by the absence of wholesale access infrastructure.

• In the UK excluding the Hull Area, on the demand-side customers were only able to choose between CPs that operate in their geographic area and we also noted that some CPs offered bespoke pricing. However, BT’s prices were uniform across the UK and, given that competitors tended to price relative to BT, this suggested that pricing had a national dimension.

167 In the ISDN30 price control prices are reduced to FAC by April 2014 on a glidepath; up until this date the charge set by the cap is above FAC. See paragraphs 4.30-4.31, Ibid.
4.69 Therefore we concluded there was a single UK market excluding the Hull Area and a separate Hull Area market.168

4.70 We do not consider that market conditions for the supply of ISDN30 have changed significantly across geographic areas since the last review in 2010. Our reasoning in 2010 thus continues to be relevant. In our view, the Hull Area continues to be distinctive, particularly as BT’s network does not cover the Hull Area in the same way that it covers the rest of the UK.

4.71 As a result we consider that the following geographic market definitions still remain appropriate:

- UK excluding the Hull Area; and
- the Hull Area.

Conclusion on retail market definition

4.72 In light of stakeholder responses to the July 2013 FAMR Consultation and our analysis above, we conclude that there remain distinct ISDN30 retail markets for the provision of:

- retail ISDN30 exchange line services in the UK excluding the Hull Area; and
- retail ISDN30 exchange line services in the Hull Area.169

Wholesale market definition

Provisional conclusion as set out in the July 2013 FAMR Consultation

4.73 In the July 2013 FAMR Consultation, our provisional conclusion was that there remains distinct ISDN30 wholesale markets for the provision of:

- ISDN30 exchange line services in the UK excluding the Hull Area; and
- ISDN30 exchange line services in the Hull Area.

Stakeholder responses to the July 2013 FAMR Consultation

4.74 BT stated that it did not “see a strong case to fundamentally redefine the existing wholesale ISDN30 market definition at this point …”170 TalkTalk agreed with our

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169 In the 2010 ISDN30 Statement, we found the ISDN30 retail market in the UK excluding the Hull Area to be effectively competitive. Consequently, we are not reviewing this market as part of this market review. We did however find in the 2010 ISDN30 Statement that KCOM has SMP in the ISDN30 retail market in the Hull Area. We consider the provision of retail ISDN30 exchange line services in the Hull Area in Section 6.
analysis of the ISDN30 market.\textsuperscript{171} No other respondents commented on Ofcom’s provisional conclusion on the wholesale ISDN30 market definition as set out in the July 2013 FAMR Consultation.

Product market definition

4.75 In the 2010 ISDN30 Statement we considered that the relevant wholesale product market was the supply of wholesale ISDN30 exchange line services. IP-based services were considered to be outside the market.

4.76 In this sub-section we define the relevant wholesale product market taking into account any new evidence we have obtained about changes since the last review, and expected changes during the course of this current review period. This assessment is structured as follows:

- first, we describe the focal product;
- second, we consider whether there are any direct demand- or supply-side substitutes for the focal product which should be included in the relevant market;
- third, we consider whether there are indirect competitive constraints that should be included in the relevant market. These arise from the potential for end-users to switch to retail products that do not require wholesale ISDN30 exchange lines (e.g. SIP Trunking, Hosted VoIP, and ISDN2); and
- finally, we set out our conclusions.

Focal product

4.77 In the context of this market review, we are reviewing the overall effectiveness of competition in the supply of wholesale ISDN30 exchange lines on fixed networks. Therefore we take this as the focal product. This focal product includes self-supply of wholesale ISDN30 exchange lines by retailers using their own PSTN, cable or fibre network, or using LLU.

Direct competitive constraints

Demand-side substitution

4.78 Other types of exchange lines, such as ISDN2 and IP-based technologies, do not provide a direct demand-side substitute as a retailer of ISDN30 exchange lines needs to buy wholesale ISDN30 inputs in order to supply its ISDN30 retail customers. However, switching at the retail level to these services does potentially impose an indirect constraint on prices at the wholesale level. This is considered below.

Supply-side substitution

4.79 To warrant inclusion in the relevant market, supply-side substitution to an alternative product needs to be both technically feasible and economically likely. In principle any form of access network could be upgraded to provide ISDN30 access. However, as discussed in the context of the retail market in paragraph 4.64, we do not consider this to be likely. The main reason for this is that it is unlikely to be economically viable to invest in network upgrades when ISDN30 is in decline, reducing the period within which to recover these costs. As a result, we do not consider that the relevant economic market should be enlarged to reflect supply-side substitution.

Indirect competitive constraints

4.80 Wholesale demand for ISDN30 exchange lines is derived from the demand of consumers at the retail level. A rise in the wholesale price of ISDN30 exchange lines would be unprofitable if the resulting rise in retail prices were to lead to sufficient end-users of ISDN30 switching to substitute products such as SIP Trunking. In such circumstances it would be appropriate to include such indirect competitive constraints in the definition of the relevant economic market.

4.81 In our assessment of the retail market we accepted that there is a degree of substitutability with IP-based services and that this may be increasing over time. Nonetheless, we have concluded that other products, including IP-based services, do not provide a sufficient constraint on retail ISDN30 prices to warrant inclusion in the relevant retail market. This suggests that indirect constraints are unlikely to be strong. We also note the likelihood that, absent regulation at the wholesale level, retail price discrimination would mitigate the extent to which consumers switch to alternative products. This is likely to further weaken any indirect constraints. Accordingly we consider that other products are unlikely to exert a sufficiently strong indirect constraint to warrant inclusion in the relevant wholesale market. There is not likely to be sufficient switching at the retail level, given our analysis of that market, such that wholesale ISDN30 prices are sufficiently constrained.

Conclusion on wholesale product market definition

4.82 In light of the factors discussed above, our final view is that, for the period of this market review, a wholesale market definition based on ISDN30 only is appropriate.

Geographic market definition

4.83 We believe that the same considerations that apply to geographic markets at the retail level also apply at the wholesale level and we therefore find two separate geographic markets:

- the UK excluding the Hull Area; and
- the Hull Area.

Conclusion on market definition

4.84 Our final conclusion is that there remain distinct ISDN30 wholesale markets for the provision of:

- ISDN30 exchange line services in the UK excluding the Hull Area; and
• ISDN30 exchange line services in the Hull Area.

**Three-criteria test for ISDN30**

4.85 The ISDN30 market is not listed in the Relevant Markets Recommendation as a market in which *ex ante* regulation may be warranted. Therefore, taking utmost account of the Relevant Markets Recommendation, we have applied the three-criteria test to assess whether *ex ante* regulation is appropriate.

**Provisional conclusion as set out in the July 2013 FAMR Consultation**

4.86 We provisionally concluded that our market definitions satisfy the criteria set out in the Relevant Markets Recommendation and that it is appropriate to analyse these markets to determine whether any provider holds SMP.

**Stakeholder responses to the July 2013 FAMR Consultation**

4.87 No stakeholders commented on Ofcom’s provisional conclusion on the three-criteria test for the ISDN30 market definition as set out in the July 2013 FAMR Consultation.

**Our analysis and conclusions**

4.88 In relation to the wholesale ISDN30 market for the UK excluding the Hull Area we consider that the three criteria set out in the Relevant Markets Recommendation are met:

• the presence of high and non-transitory barriers to entry: we consider that significant barriers to entry remain. This is discussed in more detail in our sub-section on barriers to entry and expansion in our analysis of SMP below (paragraphs 4.107 to 4.110);

• a market structure which does not tend towards effective competition within the relevant time horizon: we conclude that this market does not display a tendency towards competition. BT has maintained a very high market share over time and is currently pricing at the cap imposed by the charge control. This is discussed in more detail in the discussion on market shares (paragraphs 4.100 to 4.106) and on prices and profitability (paragraph 4.111) in our SMP assessment; and

• the insufficiency of competition law alone to adequately address the market failure(s) concerned: we consider that competition law would not be sufficient to address concerns in this market. As we explain below, we do not believe this market will tend towards competition within the relevant time horizon and therefore

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173 As noted above, we consider the provision of retail ISDN30 exchange line services in the Hull Area in Section 6. Further, we found the ISDN30 retail market in the UK excluding the Hull Area to be effectively competitive in the 2010 ISDN30 Statement; consequently, we are not reviewing this market as part of this market review.
**ex ante** regulation is necessary to promote effective competition (particularly downstream).

4.89 Similarly, we consider that, in relation to the wholesale ISDN30 market for the Hull Area, the three-criteria test is met:

- **the presence of high and non-transitory barriers to entry:** as discussed below, we consider that significant barriers to entry remain;

- **a market structure which does not tend towards effective competition within the relevant time horizon:** we conclude that this market does not display a tendency towards competition. KCOM has virtually a 100% share of the relevant market, barriers to entry and expansion remain substantial and there is no effective countervailing buyer power (paragraphs 4.115 to 4.120 below); and

- **the insufficiency of competition law alone to adequately address the market failure(s) concerned:** we consider that competition law would not be sufficient to address concerns in this market. As we explain below, we do not believe this market will tend towards competition within the relevant time horizon and therefore **ex ante** regulation is necessary to promote effective competition (particularly downstream).

4.90 We therefore are of the view that our market definitions in relation to wholesale ISDN30 markets satisfy the criteria set out in the Relevant Markets Recommendation and that it is appropriate to analyse these markets to determine whether any provider holds SMP.

**Conclusions on market definition**

4.91 In light of stakeholder responses to the July 2013 FAMR Consultation and our analysis above, and having applied the three-criteria test, we identify the following markets for the purposes of making a market power determination:

- a market for wholesale ISDN30 exchange line services in the UK excluding the Hull Area; and

- a market for wholesale ISDN30 exchange line services in the Hull Area.

**Wholesale market power assessment**

4.92 Market definition is not an end in itself. Rather, it is a tool to help assess the extent to which operators possess market power. Below we set out our assessment of whether BT and KCOM continue to possess SMP in the wholesale ISDN30 markets that we have defined above. In making that assessment we have taken utmost account of the EC SMP Guidelines, including the criteria for assessing SMP set out therein. Our general approach to the assessment of market power is described in Annex 3.

4.93 Note also that we have applied the modified Greenfield approach when carrying out our wholesale market power assessment and have therefore considered the CPs’ hypothetical market position absent the presence of SMP remedies at the wholesale level.
Provisional conclusion as set out in the July 2013 FAMR Consultation

4.94 In the July 2013 FAMR Consultation, our provisional conclusion was that:

- BT holds SMP in the wholesale supply of ISDN30 exchange line services in the UK excluding the Hull Area; and
- KCOM holds SMP in the wholesale supply of ISDN30 exchange line services in the Hull Area.

4.95 This provisional conclusion was the same as the conclusion we reached in the 2010 ISDN30 Statement.

Stakeholder responses to the July 2013 FAMR Consultation

4.96 EE\textsuperscript{174}, the FCS\textsuperscript{175}, TalkTalk\textsuperscript{177}, Verizon\textsuperscript{178} and Virgin\textsuperscript{179} agreed with Ofcom’s view in the July 2013 FAMR Consultation that BT and KCOM had SMP in the wholesale ISDN30 market. \textsuperscript{[\textcopyright]} stated that it reached this view based on high market shares and the lack of competitive pressure from potential substitute services. In addition, Verizon considered that significant developments in this market, in terms of additional competition, were unlikely during this review period.

4.97 While BT broadly agreed with Ofcom’s view that it had SMP in the wholesale ISDN30 market, it argued that the market was in “terminal” decline and it faced strong competitive pressure from new substitute products, with Vodafone and Virgin now having substantial wholesale ISDN30 businesses supplying their own downstream retail businesses.\textsuperscript{180} As such, BT stated that Ofcom should consider whether there was justification for continuing with SMP regulation at the wholesale level.\textsuperscript{181}

4.98 In addition, BT noted that, due to increased demand for IP-based services, it had placed increased focus on marketing SIP offerings to existing ISDN30 end-users. BT argued that companies moving to IP-based alternatives typically adopted a “testing the water” approach before full implementation, which meant that when customers

\textsuperscript{174} P.5, EE response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.
\textsuperscript{175} P.3, FCS response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Federation_of_Communication_Services_Ltd.pdf.
\textsuperscript{179} P.8, Virgin response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Virgin_Media.pdf.
\textsuperscript{180} Paragraph 131, BT response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.
\textsuperscript{181} This is discussed further in Section 17.
grew in confidence with the IP-based services there would be a sharper decline in ISDN30 volumes than had necessarily been observed to date.\textsuperscript{182}

4.99 As explained in Section 3 (paragraph 3.98), KCOM stated that it expected significant competitive constraints in the Hull Area from MS3’s fixed access infrastructure. In KCOM’s view, MS3’s network rollout was more extensive than Ofcom had previously considered and had the potential to significantly affect KCOM’s ISDN30 business during the period covered by this market review.\textsuperscript{183}

**ISDN30 market power assessment for the UK excluding the Hull Area**

**Market shares**

4.100 The major ISDN30 retailers predominantly obtain access through self-supply. BT exclusively self-supplies. BT’s two biggest rivals, Vodafone and Virgin, use their own networks to meet the bulk of their retail demand, although they also buy small amounts of wholesale ISDN30 from Openreach, largely to meet demand in locations where they have no network coverage. In contrast, the smaller ISDN30 retailers tend to rely upon wholesale ISDN30 provided by Openreach to be able to supply retail ISDN30. The market shares for the supply of wholesale ISDN30 exchange lines between September 2007 and September 2013 are set out in Table 4.1.\textsuperscript{184}

<table>
<thead>
<tr>
<th>Table 4.1: Wholesale ISDN30 market shares</th>
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<tbody>
<tr>
<td>Sep 07</td>
</tr>
<tr>
<td>Openreach</td>
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<tr>
<td>Vodafone</td>
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<tr>
<td>Virgin</td>
</tr>
<tr>
<td>Others</td>
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<tr>
<td>Total market (Channels)</td>
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</table>

Source: Market shares for September 2010-September 2013 were calculated using data received in responses to question 3.3 of the s.135 notices of 26 November 2012, updated in responses to the s.135 notice of 12 February 2014. Responses were received from BT, Vodafone, TalkTalk, Verizon and Virgin. One CP [\textsuperscript{184}] identified an error in its systems which record volumes for ISDN30 and as a result there was a discontinuity in its data submission in September 2011 – this is discussed in footnote 148 above. We also had concerns over the reliability of data provided for this review by another CP [\textsuperscript{184}], and have chosen to exclude this from the calculations. Market shares before September 2010 were calculated from data provided as part of our previous review of this market in 2010, and were originally presented in the Table 7.1 of the 2010 ISDN30 Consultation. However, we have recalculated these using the original data but excluding [\textsuperscript{184}] (this is to ensure consistency, since we have also excluded this CP from our calculations for September 2010 onwards).

4.101 As Table 4.1 shows, BT’s market share has remained relatively constant over time, with a slight increase in the period since the last review in 2010, and in September

\textsuperscript{182} Paragraphs 133 and 134. BT response to the July 2013 FAMR Consultation, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf).

\textsuperscript{183} P.3, KCOM response to the July 2013 FAMR Consultation, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/KCOM.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/KCOM.pdf).

\textsuperscript{184} In line with our approach in the 2010 ISDN30 Consultation, we consider that the impact on competition of CPs is best measured by their current market shares as opposed to hypothetical shares based on the size of their narrowband networks. See paragraph 6.23, Ofcom, *Review of retail and wholesale ISDN30 markets – consultation*, 4 May 2010, [http://stakeholders.ofcom.org.uk/binaries/consultations/isdn30/summary/isbn30.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/isdn30/summary/isbn30.pdf).
2013 stood at \([\times\]%\).\(^{185}\) For the period 2007-2009, BT’s wholesale market share fluctuated between \([\times\]%\) and \([\times\]%\). In the period since the last review (2010-2013), BT’s wholesale market share fluctuated between \([\times\]%\) and \([\times\]%\).\(^{186}\) Stable market shares of this magnitude create a clear presumption that BT has SMP. In its response to the July 2013 FAMR Consultation, BT claimed that Vodafone and Virgin have “substantial” wholesale ISDN30 businesses. However, they continue to account for only a minority of ISDN30 channels (even if considered cumulatively, Vodafone and Virgin accounted for only \([\times\]%\) of the wholesale ISDN30 market share as at September 2013).

4.102 To date, there has been a gradual decline in the wholesale ISDN30 market size as volumes have declined (as shown in Table 4.1). This decline can partly be attributed to a general trend moving away from ISDN30 towards IP-based services (as discussed above in paragraphs 4.36 to 4.42), and we recognise that this trend is likely to continue during this review period. BT is increasingly marketing its IP-based services, however, given the boundaries of the market that we have defined, this does not necessarily lead to a finding that BT does not have SMP in the relevant wholesale ISDN30 market. Rather, it leads to an inference (consistent with the declining ISDN30 market size as set out in Table 4.1 above) that the number of people using ISDN30 will fall in the period covered by this review.

4.103 We also acknowledge BT’s response to the July 2013 FAMR Consultation which argued that customers adopt a “testing the water” approach before full implementation of IP-based services, which could suggest a sharper decline in ISDN30 volumes in the future (as set out in paragraph 4.98). We specifically consider the issue of running both ISDN30 and IP-based services in paragraph 4.55. While we acknowledge that a transitional dual running of services may occur, we consider it would be highly speculative at this stage to assume a sharper decline in volumes during this review period given consumer preferences and the complex range of drivers in this migration decision (set out in paragraphs 4.43 to 4.58).

4.104 As discussed above, we accept that there is a degree of substitutability with IP-based services but do not consider that it is sufficiently strong to warrant the inclusion of these services within the relevant market. Nonetheless, for the sole purpose of assessing an upper bound for the extent of the constraint that IP-based services may exert, we have also considered the impact on market shares if we were to include SIP Trunking (the likely closest substitute to ISDN30) in the relevant market.\(^{187}\) Even after including SIP Trunking, BT would have had a share of supply of \([\times\]%\) in

\(^{185}\) Following an update of the stakeholders’ responses to the original s.135 notice of 26 November 2012 (in response to the s.135 notice of 12 February 2014) one CP \([\times\]%\) has cast doubt on its estimates of the ISDN30 volumes provided in its original response. As a result, it provided new ISDN30 volumes (both actuals and forecasts) which it believes to be more accurate. We do not consider that this affects the conclusions that we draw from the data, however it does result in a slight change in the total historic ISDN30 volumes (and respectively the market shares) from September 2010 to September 2012 previously reported in the July 2013 FAMR Consultation. \([\times\]%\) believes that its market share has not changed significantly over that period and attributes change in figures to a change in the methodology it used to derive them.

\(^{186}\) Note that there is a break in data in 2010 (as explained in the notes under Table 4.1) but that, even though the market shares for the period 2007-2009 are not directly comparable with market shares for the period 2010-2013, they are still useful when showing that BT’s market share has been stable within those two time periods.

September 2013.\textsuperscript{188} This remains sufficiently high to give rise to a presumption of SMP. Importantly, this \( \times \)\% figure overstates the constraint from SIP Trunking as we have found it to be just outside the relevant market. Accordingly, we consider that this \( \times \)\% figure is likely to understate the extent of BT’s market power.

4.105 We recognise that, using BT’s own forecasts of SIP Trunking and wholesale ISDN30, this share of supply figure is likely to decline over time as a consequence of forecast growth in IP-based services. Nonetheless, we remain of the view that BT is likely to enjoy a position of SMP during the period covered by this market review for two reasons. First, as noted above, shares of supply calculated on this basis are likely to understate the extent of BT’s market power and, in any event, are sufficiently high to give rise to a presumption of SMP. Second, BT appears particularly well placed to convert its current ISDN30 customers to SIP Trunking as it currently has a large wholesale and retail ISDN30 customer base at which it can directly target marketing of IP-based services; thus even if SIP Trunking did become part of the relevant market in the future, BT would still be well placed to maintain its high market share.

4.106 Moreover, as discussed in paragraph 4.38, we recognise there are significant difficulties in forecasting volumes, particularly for relatively new products such as BT’s SIP Trunking service. This also suggests that we should not put too much weight on the future shares of supply calculated on the basis of uncertain forecasts about ISDN30 volumes and SIP Trunking.

Barriers to entry and expansion

4.107 We consider that the barriers to entry and expansion remain at least the same as those discussed in the 2010 ISDN30 Statement and are possibly even greater at this stage given the increased maturity of the ISDN30 product.

4.108 Barriers to entry and expansion are high due to the large sunk costs that would need to be incurred to establish the infrastructure required to provide an ISDN30 exchange line. Volume forecasts submitted by CPs suggest that ISDN30 volumes will continue to decline (see Figure 4.2 above). As a result these barriers will increase in the future due to the more limited time period and customer volumes over which to recover these sunk costs.

4.109 Even if it is plausible for new entrants to supply ISDN30-type exchange lines using LLU, there remain non-trivial sunk costs that are required to upgrade switches to offer ISDN30 functionality and recovering these costs in a declining market is likely to act as a barrier to entry.

4.110 Declining demand for ISDN30 (as a result of some switching to alternative IP-based services) means that there are fewer customers which new entrants could attempt to attract. In order to attract customers a new entrant would need to persuade existing ISDN30 customers of competitors to switch supplier, rather than attracting customers that currently do not buy ISDN30. This is likely to increase the obstacles to new entrants winning sufficient business.

\textsuperscript{188} This share is calculated using the sum of Openreach’s wholesale ISDN30 volumes and SIP Trunking volumes. Openreach’s volumes for wholesale ISDN30 and SIP Trunking were provided in response to question 3.3 of the s.135 notices of 26 November 2012, updated in its response to question 2.1 of the s.135 notice of 12 February 2014. Volumes for the SIP/IP Trunking market were provided by Illume Research.
Prices and profitability

4.111 Since we imposed a charge control on wholesale ISDN30 prices in the 2012 ISDN30 Charge Control Statement, BT has set its ISDN30 prices at the maximum level permitted under that charge control. BT’s pricing of these services since the current charge controls were introduced thus appears to be determined significantly by the regulatory controls imposed upon it rather than market forces, and we expect this to continue to be the case over the forward look period covered by this market review. This is consistent with a finding of SMP and would appear inconsistent with BT’s argument (as set out above) that it faces strong competitive pressure from substitute products.

Countervailing buyer power

4.112 We do not consider that conditions for buyers in the ISDN30 market have changed materially since the 2010 ISDN30 Statement. Retailers continue to have no effective choice of wholesaler as vertically integrated providers such as Vodafone and Virgin have very limited commercial incentive to supply rival providers (as shown by the fact that they have so far decided not to sell to competing retail providers). If these firms were to supply third party resellers, they would be facilitating direct competition with their own downstream businesses. It is unlikely, therefore, that they would choose to do this. As a result of the lack of alternative suppliers, we consider that retailers have very little countervailing buyer power.

Conclusions on SMP in the UK excluding the Hull Area

4.113 In conducting the SMP assessment set out above we have found that:

- BT accounts for a high, stable share of wholesale ISDN30 channels;
- while we accept that there is a degree of substitutability with IP-based services, even taking the constraint exerted by these ‘out of market’ products into account BT is likely to continue to enjoy a strong market position during the period covered by this market review; and
- other market conditions have not changed significantly since the 2010 ISDN30 Statement. There remain significant barriers to entry, a lack of countervailing buyer power and the potential for BT to charge high prices to its customers absent regulation.

4.114 In light of stakeholder responses to the July 2013 FAMR Consultation and our analysis above, we conclude that BT continues to have SMP in the supply of wholesale ISDN30 exchange lines in the UK excluding the Hull Area.

ISDN30 market power assessment for the Hull Area

4.115 In the 2010 review we found KCOM had virtually a 100% share of the market for wholesale ISDN30 services in the Hull Area.

4.116 In response to the July 2013 FAMR Consultation, KCOM stated that the current network deployment undertaken by MS3 in the Hull Area is more extensive than Ofcom had previously considered and has the potential to significantly impact
KCOM’s business over the period of this review. Although MS3 has not stated explicitly that it intends to offer ISDN30 exchange line services, this is technically possible over a fibre network.\textsuperscript{189}

4.117 As explained in Section 3 (paragraph 3.147), we consider that MS3 is unlikely to gain significant market share and thus exert a sufficiently strong competitive constraint such that KCOM ceases to enjoy SMP in the wholesale supply of ISDN30 in the Hull Area during the period covered by this review. We thus believe that KCOM will continue to enjoy a very strong market position in the Hull Area.

4.118 Barriers to entry in this market are also increased by the fact that ISDN30 is a declining product. Any new entrant wishing to enter the market would need to invest considerably in rival infrastructure to KCOM, and, given the small geographic area and declining ISDN30 volumes, would likely have a limited customer base and limited time period within which to recover these costs.

4.119 Any form of countervailing buyer power is unlikely given KCOM is currently the only wholesale supplier of ISDN30 in the Hull Area.

4.120 In light of stakeholder responses to the July 2013 FAMR Consultation and our analysis above, we conclude that KCOM continues to hold SMP in the wholesale supply of ISDN30 exchange line services in the Hull Area.

\textsuperscript{189} P.3, KCOM response to the 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/KCOM.pdf.
Section 5

Market definition and SMP analysis: ISDN2

Introduction

5.1 In this section we set out our market definition and assessment of market power in relation to the provision of ISDN2. The reasoning for carrying out a market definition and market power assessment, including our general approach to doing so, is set out in Annex 3. In approaching our assessment of market definition for the ISDN2 market, we have taken utmost account of the guidance on market definition in the EC SMP Guidelines. We consider that the impact of IP-based services on ISDN2 is of particular importance in this review and have therefore focused attention on this issue.

5.2 This section is structured as follows:

- we summarise the position in our previous market review;
- we define the relevant retail markets, taking into account stakeholder responses to the July 2013 FAMR Consultation;
- we define the relevant wholesale markets, taking into account stakeholder responses to the July 2013 FAMR Consultation;
- we explain why our approach to ISDN2 is consistent with the Relevant Markets Recommendation;
- we set out our assessment of wholesale market power, taking into account stakeholder responses to the July 2013 FAMR Consultation; and
- we set out our assessment of retail market power, taking into account stakeholder responses to the July 2013 FAMR Consultation.

5.3 In summary, we conclude that a market definition based only on ISDN2 exchange lines at both the retail and wholesale levels remains appropriate. IP-based services such as SIP Trunking are growing and becoming increasingly important but we consider these do not yet pose a sufficient constraint on the supply of ISDN2 to warrant inclusion in the relevant product market.

5.4 In our market power assessments at the retail and wholesale level we conclude that:

- BT holds SMP in the provision of wholesale ISDN2 exchange line services in the UK excluding the Hull Area;
- KCOM holds SMP in the provision of wholesale ISDN2 exchange line services in the Hull Area; and
• no communications provider holds SMP in the provision of retail ISDN2 exchange line services in the UK excluding the Hull Area.\textsuperscript{190}

**Position in the previous market reviews**

5.5 The findings of our previous reviews are set out in the 2009 Retail Narrowband Statement\textsuperscript{191} and the 2009 Wholesale Narrowband Statement.\textsuperscript{192}

5.6 As demand for wholesale ISDN2 exchange lines is derived from demand at the retail level, we first considered the retail market. Our position on retail market definition was as follows:

• analogue access, ISDN30 and ISDN2 each lie in separate markets;

• leased lines are not a direct substitute for ISDN2;

• broadband services are in a separate market; and

• there are two separate geographic markets: the UK excluding the Hull Area, and the Hull Area.

5.7 Our views on the wholesale ISDN2 market reflected the position at the retail level.

5.8 In the 2009 Wholesale Narrowband Statement we found that BT had SMP in the market for ISDN2 both at the wholesale and retail level in the UK excluding the Hull Area.

5.9 We concluded that KCOM had SMP in the supply of ISDN2 exchange lines at both the wholesale and retail level in the Hull Area.

**Retail market definition**

**Provisional conclusion as set out in the July 2013 FAMR Consultation**

5.10 In the July 2013 FAMR Consultation, our provisional conclusion was that, for the period of this market review, a market definition based on ISDN2 only is still appropriate. We considered that analogue exchange lines, leased lines and ISDN30 are not close substitutes for ISDN2. We also considered that IP-based services are not sufficiently close demand-side substitutes for ISDN2, and therefore lie outside the relevant market.

5.11 We also provisionally concluded that there remain two geographically distinct ISDN2 retail markets for the provision of:

• retail ISDN2 exchange line services in the UK excluding the Hull Area; and

• retail ISDN2 exchange line services in the Hull Area.

\textsuperscript{190} We consider the provision of retail ISDN2 exchange line services in the Hull Area in Section 6.

\textsuperscript{191} Ofcom, *Fixed Narrowband Retail Services Markets*, 15 September 2009

\textsuperscript{192} Ofcom, *Review of the fixed narrowband services wholesale markets*, 15 September 2009
Stakeholder responses to the July 2013 FAMR Consultation

5.12 No stakeholders commented on Ofcom's provisional conclusion on the retail ISDN2 market definition as set out in the July 2013 FAMR Consultation. However, since retail market definition affects both wholesale market definition and the assessment of SMP, stakeholders’ responses on these topics (see paragraphs 5.53 and 5.78 to 5.80) are also relevant.

Product market definition

5.13 As the starting point for the product market definition exercise, we have taken ISDN2 as the focal product. Looking at both the demand- and supply-side, we have then considered whether the retail price of ISDN2 is constrained by a variety of potential substitutes.

5.14 ISDN2 is a narrowband access service designed to cater for smaller business sites. It used to be available for both business and residential sites, but it is now a business only product. ISDN2 lines are provided using copper access network infrastructure and are designed to provide two digital 64kbit/s channels supporting traditional telephony, facsimile and data with a guaranteed transmission rate (speed).

5.15 We have sought to identify the main uses of ISDN2 lines, as whether ISDN2 is mainly bought by specific types of user for specific purposes is relevant to the substitutability of other services for ISDN2. BT informed us that it considers multiline voice to be the main use of ISDN2. We understand that the main current uses of ISDN2 lines are:

- multiline voice;
- internet access (in areas where broadband access is poor);
- video conferencing;
- electronic point of sale applications ('EPOS');
- automated teller machines ('ATMs');
- backup;
- outside broadcast; and
- street furniture (e.g. traffic lights).

5.16 We also collected information on BT’s 10 largest retail customers which highlighted that high street banks featured quite heavily amongst the largest users of ISDN2. We understand that ATMs use ISDN2 lines due to the security, high quality of service

193 Uses of ISDN2 were provided to us by BT. ATMs were not in this list, but have been added as we understand this to be an important use for ISDN2, as noted in paragraph 5.67 of Ofcom, Fixed Narrowband Retail Services Markets, 15 September 2009, http://stakeholders.ofcom.org.uk/binaries/consultations/retail_markets/statement/statement.pdf.

194 A significant minority of the 10 largest customers were high street banks [23]. BT response to question 2 of the s.135 notice of 28 March 2013.
and reliability characteristics of ISDN2. ATMs only require very low bandwidth, but 24 hour service reliability is considered to be vitally important. ATMs are also spread out in many locations, so companies would choose to buy this low bandwidth service to terminate in multiple locations, as opposed to ISDN30 for example, as greater bandwidth/more channels are not necessary for this use. Very similar considerations are also important for EPOS uses.

5.17 We also understand that ISDN2 is used quite widely for backup purposes (i.e. it is used in the instance of a failure of the primary service), again due to its reputation for reliability and high quality of service. Some legacy video conferencing services may also make use of ISDN2, since a high level of reliability and a stable connection helps to maintain picture and audio quality.

5.18 Given the uses of ISDN2 lines we have identified above, we consider there are likely to be particular characteristics of the service which are highly valued by users. The most significant is the need for a high quality of service and a high level of reliability. Of the uses identified, other characteristics such as greater bandwidth are likely to be less important. This suggests that alternative products may not be suitable demand-side substitutes for ISDN2 lines if they involve a reduction in quality of service or reliability.

Demand-side substitution

5.19 The potential substitutes we have identified at the retail level for ISDN2 exchange line services are as follows:

- analogue exchange lines;
- ISDN30;
- leased lines; and
- IP-based services.

5.20 We first discuss the extent to which these products constrain retail ISDN2 prices below. We then consider the potential for price discrimination, in particular targeting any price rises at ISDN2 consumers that are unlikely to switch.

Analogue exchange lines

5.21 An analogue exchange line and a single ISDN2 line are currently priced at a similar level (£21.55 excl. VAT per channel per month for ISDN2 and £19.00 excl. VAT per month for an analogue exchange line).\(^{195}\)

5.22 We consider that analogue exchange lines are unlikely to be a suitable substitute for ISDN2 and, therefore, are unlikely to constrain ISDN2 prices. The main reason for this is the additional capabilities of ISDN2. These capabilities relate primarily to its

\(^{195}\) BT retail prices correct as of 17 March 2014. ISDN2 price based on BT’s low start tariff with a 1 year contract; analogue exchange line price based on BT’s standard business phone line on a 1 year contract.
telephony characteristics (as broadband has largely superseded ISDN2 in terms of data usage)\textsuperscript{196}:

- an ISDN2 service provides the capability for simultaneous Internet access and voice telephony; and
- an ISDN2 service supports a much wider range of supplementary services (e.g. Digital Select Services and DDI).

\textit{Leased lines}

5.23 There are fundamental differences in the characteristics of ISDN2 and leased line services. For example, ISDN2 provides switched voice and data access services whereas a leased line provides transmission capacity only. Additional equipment would be required in order to upgrade leased lines to offer ISDN2 functionality. Therefore a retail customer cannot buy leased lines alone as a demand-side substitute for ISDN2 exchange lines. Further, we note that the price of leased lines is significantly higher than for ISDN2, reflecting their dedicated nature. As a result, we do not consider leased lines are likely to constrain retail ISDN2 prices from a demand-side perspective (we discuss supply-side substitution below).

\textit{ISDN30}

5.24 ISDN2 and ISDN30 are functionally very similar services but offered with differing numbers of channels. BT offers ISDN30 services ranging from between 8 and 30 channels, with charges on a per channel basis above the minimum number of 8.\textsuperscript{197} In contrast, ISDN2 services provide 2 channels.

5.25 ISDN2 services are appropriate for sites requiring up to 8 voice channels. ISDN30 would not be cost effective for consumers that require fewer than 8 channels, since some channels would be unused. Conversely, ISDN2 is not generally used for much larger sites since ISDN30 would be a more cost effective service for businesses requiring greater than 8 channels.\textsuperscript{198} From the perspective of ISDN2 users (i.e. sites requiring fewer channels, including users that require lines in a number of different physical locations) we thus consider that ISDN2 and ISDN30 do not lie in the same market on the demand side. Moreover, there is a significant connection cost associated with switching from ISDN30 to ISDN2.

\textit{IP-based services and ISDN2}

5.26 IP-based telephony services are services for the exchange of information primarily in the form of speech that use IP. There are two main types of IP based technologies:

\textsuperscript{199}


\textsuperscript{197} www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=WH17ucyC%2Fy7E1PoECWJLs3T0E4HidA8NS2h%2Bn93uuQ1MnGHsqdC0vzO163bJmh34D91D7Mq8u%2F%0AiltF%0AiltFAKw%3D%3D.

\textsuperscript{198} Currently BT prices basic ISDN2 at £21.55 excl. VAT per channel per month (on a 1 year contract) and ISDN30 (without DDI quota) at £21.15 excl. VAT per channel per month (on a 1 year contract). Prices correct as of 17 March 2014, see www.business.bt.com/phone-services/isdn/pricing/.

\textsuperscript{199} A variety of underlying bearers could be used for IP-based services, including DSL, EFM, leased lines etc.
• Hosted VoIP and IP Centrex; and
• SIP Trunking.

5.27 Our assessment of the extent to which IP-based services constrain the price of ISDN2 is structured as follows:
• description of IP-based services;
• volume trends for ISDN2 and IP-based services;
• main drivers of the trends in volumes;
• consideration of the three main barriers to switching from ISDN2 to IP-based services that we have identified; and
• our conclusions.

**Description of IP-based services**

5.28 We note that ISDN2 and ISDN30 are functionally very similar services but are offered with differing numbers of channels. As a result we consider that much of the discussion about IP-based services as a potential substitute to ISDN30 (in terms of functionality) set out in the previous section also applies to ISDN2. The functional differences of ISDN30 and IP-based services and the drivers behind the trends in volumes are discussed in paragraphs 4.43 to 4.58.

**Volume trends for ISDN2 and IP-based services**

5.29 Broadband superseded ISDN2 for residential use several years ago. Accordingly, ISDN2 is now a business only product. We consider that IP-based services are the closest potential substitute for ISDN2 and therefore we have analysed the volume trends of each service below.

**Figure 5.1: Historic wholesale ISDN2 volumes**

<table>
<thead>
<tr>
<th>Year</th>
<th>2008/09</th>
<th>2009/10</th>
<th>2010/11</th>
<th>2011/12</th>
<th>2012/13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>896,103</td>
<td>783,623</td>
<td>640,549</td>
<td>616,257</td>
<td>556,891</td>
</tr>
<tr>
<td>External</td>
<td>400,915</td>
<td>461,968</td>
<td>501,191</td>
<td>524,051</td>
<td>580,944</td>
</tr>
<tr>
<td>Total</td>
<td>1,297,018</td>
<td>1,245,591</td>
<td>1,141,740</td>
<td>1,140,308</td>
<td>1,137,835</td>
</tr>
</tbody>
</table>

**Source:** BT Regulatory Financial Statements

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**Table 5.1: Openreach Wholesale ISDN2 Volumes**

<table>
<thead>
<tr>
<th>Year</th>
<th>2008/09</th>
<th>2009/10</th>
<th>2010/11</th>
<th>2011/12</th>
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<td>1,137,835</td>
</tr>
</tbody>
</table>

**Source:** BT Regulatory Financial Statements

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201 Openreach wholesale ISDN2 volumes received in response to question 3.2 of the s.135 notice of 26 November 2012, updated in response to question 2.2 of the s.135 notice of 12 February 2014. Openreach accounts for almost the entire wholesale market for ISDN2 so wholesale volumes are also representative of retail market volumes.
5.30 Figure 5.1 shows BT’s wholesale ISDN2 volumes over the period March 2009 to March 2013. Overall volumes have declined gradually since March 2009, at a rate of approximately 3% per year.

5.31 Table 5.1 shows the extent to which BT’s wholesale volumes can be attributed to BT’s internal use or, in the alternative, to external CPs (note that BT has historically been required to provide wholesale services to other CPs). At the time of the 2009 Retail Narrowband Statement, BT had a near 100% market share of ISDN2 exchange lines at the wholesale level. We have not been provided with any evidence to suggest that this has changed. Therefore the volumes presented in Table 5.1 also provide a representative picture of ISDN2 volumes at the retail level between BT (internal) and all other providers (external).

**Figure 5.2: Forecast wholesale ISDN2 volumes**

Source: BT

5.32 BT also provided us with forecasts of wholesale ISDN2 volumes covering the period of this market review. These forecasts suggest that BT expects the rate of decline in ISDN2 volumes to more than double during the review period – an average annual decline of [X]% This is presented in Figure 5.2 above. In its initial response to the s.135 notice of 26 November 2012, BT forecasted that in the period between September 2012 and September 2013 ISDN2 volumes would decline by [X]%; however, in updated figures provided in response to question 2.2 of the s.135 notice of 12 February 2014, the actual decline in ISDN2 volumes was only [X]% in that period. This indicates that the rate of decline has accelerated slightly over the last year (compared to that reported in paragraph 5.30 above) but not as much as BT has suggested. Nonetheless, even using BT’s forecasts, a considerable ISDN2 user base is expected to remain at the end of the period covered by this market review (approximately [X] channels).

5.33 The growth in volumes of IP-based services (SIP/IP Trunking and Hosted VoIP) are presented in Figures 4.3 and 4.4, and discussed in paragraphs 4.39 to 4.41 in the previous section. As set out in that section, the decline in the number of ISDN channels has been less than the increase in IP channels over the past three years, including when we consider the sum of ISDN2 and ISDN30 volumes. This comparison is discussed in greater length in paragraph 4.40.

5.34 In summary, ISDN2 volumes are gradually falling. BT’s forecasts suggest this decline will accelerate. While it seems likely that ISDN2 volumes will continue to fall, we consider that there is considerable uncertainty about the rate of decline. In particular, the implication of BT’s forecast appears to be that this market review period represents a ‘turning point’ i.e. the point at which the rate of decline

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202 Openreach wholesale ISDN2 volumes received in response to question 3.2 of the s.135 notice of 26 November 2012, updated in response to question 2.2 of the s.135 notice of 12 February 2014.

203 We consider this comparison to be relevant since that IP-based services are the closest potential substitute to both ISDN2 and ISDN30. Moreover, BT has suggested that switching behaviour by both ISDN2 and ISDN30 customers has contributed to the growth in IP volumes.

204 We noted in paragraph 4.36 that, in relation to ISDN30, BT’s submissions during the 2010 ISDN30 review significantly overestimated the significance of the decline in ISDN30 volumes relative to the decline that occurred in reality. This highlights the difficulties in predicting the demand for services in the future and as a result we treat these forecasts with caution.
accelerates significantly because of a significant shift in consumer preferences. Identifying such ‘turning points’ in advance is particularly difficult over and above the inherent uncertainty associated with forecasts and there are other factors that suggest such a ‘turning point’ in this market review period may be unlikely. We consider the drivers behind the trends in volumes for ISDN2 and IP-based services below.

**Main drivers of the trends in volumes**

5.35 We consider that the drivers of the trends in volumes are very similar to those driving the gradual switching of users from ISDN30 to IP-based services discussed in paragraphs 4.43 to 4.49. In summary, we consider the following reasons are key:

- IP-based services can offer greater flexibility, such as trunk aggregation to reduce the number of channels required, ease of switching capacity between voice and data etc;
- IP-based services are generally marketed as a cheaper alternative to ISDN; and
- there are barriers to switching, which we discuss below (these will affect the trends in volumes).

**Barriers to switching**

5.36 We consider there remain barriers to switching away from ISDN2, in particular we have identified:

- the importance of particular service characteristics for particular uses (such as quality of service and reliability);
- costs of switching; and
- functionality differences and standards.

5.37 We identified a number of uses for ISDN2 in paragraph 5.15 above, and discussed the important characteristics of the ISDN2 service which lead it to be suitable for such purposes. We now consider whether IP-based services are able to fulfil the requirements of these users given the importance of particular characteristics.

5.38 We noted that for a number of the uses of ISDN2, reliability and high quality of service were vital, e.g. use in ATMs and use as a backup service. For such services it seems unlikely that users would switch to IP-based alternatives given some consumers’ views that such alternatives are inferior in respect of reliability and quality of service. As we discussed in paragraphs 4.54 to 4.56 in the context of ISDN30, end-user experiences and perceptions of IP-based alternatives have shown that such
services are currently not considered to offer the same level of reliability as ISDN30.\footnote{\textsuperscript{205}}

5.39 BT considered the biggest use for ISDN2 was to provide multiple telephone lines to a PBX.\footnote{\textsuperscript{206}} For customers considering switching to SIP Trunking services this would represent an additional cost as they would be required to have an IP enabled PBX. On the other hand, customers that use ISDN2 service for data transmission (e.g. ATMs and EPOS terminals) do not require a PBX although there would still be the cost of upgrading some of the equipment for use with IP-based services using a different bearer service (e.g. EFM, FTTC, ADSL, leased line). These costs are likely to be of a smaller magnitude than those involved in IP-enabling a PBX for voice purposes given the reduced complexity of the device.

5.40 We noted in Section 4 that there remained some concerns with Hosted VoIP services regarding number porting and that the coexistence of multiple VoIP communications protocols, some of which are standards based (e.g. IETF’s SIP, ITU’s H.323) and others proprietary (e.g. IAX2), means that not all equipment is interoperable. We consider these further barriers to switching to IP-based services from ISDN30 are also relevant to ISDN2 users who consider switching to IP-based services. These barriers are discussed in more detail in paragraphs 4.57 to 4.58.

5.41 While BT indicated that multiline voice is the largest use for ISDN2, broadband is potentially an alternative for some of the applications listed in paragraph 5.15 above e.g. video conferencing, EPOS.\footnote{\textsuperscript{207}} However the barriers to switching we identified in relation to IP-based services (particularly reliability, service quality and the costs of upgrading equipment) are likely to also apply in the case of these applications. This is the same position that we adopted in the 2009 Retail Narrowband Statement.\footnote{\textsuperscript{208}}

**Conclusion on IP-based services**

5.42 Therefore, while we accept that there is a degree of substitutability with IP-based services and that this may be increasing over time, we do not consider that the constraint from IP-based services is likely to be sufficiently strong within the forward look period of this review to warrant the inclusion of these services within the relevant market from a demand-side perspective.

**The potential for price discrimination**

5.43 BT is currently required to provide wholesale ISDN2 access on reasonable request and is subject to cost orientation when setting the wholesale charge. This means that, if BT charged higher retail ISDN2 prices to consumers who are not well placed to switch to IP-based services, it could be undermined by those consumers switching to other ISDN2 retailers (who buy ISDN2 at the wholesale level from BT).

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\footnote{\textsuperscript{205} We recognise that ISDN2 customers are different to ISDN30 customers and that they use the services for different purposes. Nonetheless, it seems plausible that they have similar perceptions of IP-based alternatives in terms of reliability and quality of service. We note that we reached the same conclusion in the 2009 Retail Narrowband Statement (see paragraph 4.73, Ofcom, \textit{Fixed Narrowband Retail Services Markets}, 15 September 2009, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/retail_markets/statement/statement.pdf}).}

\footnote{\textsuperscript{206} Informal information submission from BT, 13 March 2013.}

\footnote{\textsuperscript{207} Ibid.}

\footnote{\textsuperscript{208} Paragraphs 4.72-4.75, Ofcom, \textit{Fixed Narrowband Retail Services Markets}, 15 September 2009, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/retail_markets/statement/statement.pdf}.}
5.44 However, absent regulation at the wholesale level, it is likely that BT would not choose to provide wholesale products on reasonable terms. In this environment BT is likely to face almost no competitors at the retail level given it accounts for almost 100% of wholesale ISDN2 supply. Thus, absent regulation at the wholesale level, BT is likely to find it more feasible to price discriminate between its retail ISDN2 customers. In particular, it could increase prices for those consumers who were unlikely or unable to switch, and offer reduced prices to those considering switching to alternative technologies. Such retail price discrimination would likely mitigate the extent to which consumers switch to alternative products. In particular, it seems plausible that BT – as a longstanding ISDN2 provider – has sufficient knowledge of its customer base to engage in such activity.

Supply-side substitution

5.45 Similar to the case of ISDN30, it would be possible for CPs providing analogue exchange lines, ISDN30, services over LLU or leased lines to upgrade their networks to offer ISDN2 services. However, this would require significant investment to provide the necessary functionality.

5.46 Given that ISDN2 volumes are forecast to decline, such investments are less likely to be economically viable given the limited time period over which sunk costs could be recovered, and the fact that adding to capacity in a market forecast to decline is likely to lead to a fall in the retail prices over the period of the investment. Further, CPs are more likely to concentrate their efforts on promoting their IP-based services as alternatives to ISDN2 rather than investing in new infrastructure in order to provide ISDN2 services.

Conclusion on retail product market definition

5.47 In light of stakeholder responses to the July 2013 FAMR Consultation and the evidence presented above, we believe that, for the period covered by the current market review, a market definition based on ISDN2 only is still appropriate. We consider that analogue exchange lines, leased lines and ISDN30 are not close substitutes for ISDN2. We also consider that IP-based services are not sufficiently close demand-side substitutes for ISDN2, and therefore lie outside the relevant market.

5.48 Despite our decision to define the market in this way, we do recognise that IP-based services are growing and that this is expected to continue during the forward look period.

Geographic market

5.49 In the 2009 Retail Narrowband Statement we concluded there were separate geographic areas for the UK excluding the Hull Area, and the Hull Area. We found:

209 This scenario is relevant to the issue of wholesale market definition (as explained in Annex 3, the extent of substitutability at the retail level determines the extent of indirect constraints). When defining wholesale ISDN2 markets it is appropriate to consider the position absent the presence of SMP remedies at the wholesale level (this reflects the application of the modified Greenfield approach, which is described in Annex 3).

• on the demand-side, customers are only able to choose between the CPs that operate in their geographic area;

• all CPs have national uniform pricing policies and national marketing campaigns such that competition on the supply-side of the market has a clear national dimension. The exception was the Hull Area, where the main UK based retailers, including BT, did not offer a competing residential retail service due to the absence of access infrastructure (there is no cable, LLU, or WLR); and

• for consumers in the Hull Area there is no effective demand-side substitution, while supply-side substitution from the rest of the UK is limited by the absence of access infrastructure, particularly WLR.

5.50 We do not consider that market conditions have changed significantly across geographic areas since the 2009 Retail Narrowband Statement. It continues to be the case that BT does not supply ISDN2 services in the Hull Area. In our view the Hull Area continues to be distinct, particularly as BT’s network does not cover the Hull Area in the same way that it covers the rest of the UK. As a result we consider that the factors we identified in the 2009 review will continue to hold and that the following geographic market definitions remain appropriate:

• the UK excluding the Hull Area; and

• the Hull Area.

Conclusion on retail market definition

5.51 In light of stakeholder responses to the July 2013 FAMR Consultation and our analysis above, we conclude that there remain distinct ISDN2 markets for the provision of:

• retail ISDN2 exchange line services in the UK excluding the Hull Area; and

• retail ISDN2 exchange line services in the Hull Area.

Wholesale market definition

Provisional conclusion as set out in the July 2013 FAMR Consultation

5.52 In the July 2013 FAMR Consultation, our provisional conclusion was that there remain distinct ISDN2 wholesale markets for the provision of:

• ISDN2 exchange line services in the UK excluding the Hull Area; and

• ISDN2 exchange line services in the Hull Area.

Stakeholder responses to the July 2013 FAMR Consultation

5.53 BT stated that it did not “see a strong case to fundamentally redefine the existing wholesale ISDN2 market definition at this point …”211 TalkTalk agreed with our

analysis of the ISDN2 market.\textsuperscript{212} No other respondents commented on Ofcom’s provisional conclusion on the wholesale ISDN2 market definition as set out in the July 2013 FAMR Consultation.

Product market definition

5.54 In the 2009 Wholesale Narrowband Statement,\textsuperscript{213} we considered that the relevant wholesale product market was the supply of wholesale ISDN2 exchange line services.

5.55 In this sub-section we define the relevant wholesale product market taking into account any new evidence we have obtained about changes since the last review and expected changes during the course of this current review period. This assessment is structured as follows:

- first, we describe the focal product;
- second, we consider whether there are any direct demand- or supply-side substitutes for the focal product which should be included in the relevant market;
- third, we consider whether there are indirect competitive constraints that should be included in the relevant market. These arise from the potential for end-users to switch to retail products that do not require wholesale ISDN2 exchange lines (e.g. SIP Trunking, Hosted VoIP, and ISDN30); and
- finally, we set out our conclusions.

Focal Product

5.56 In the context of this market review, we are reviewing the overall effectiveness of competition in the supply of wholesale ISDN2 exchange lines on narrowband networks. Therefore, it is appropriate to take wholesale ISDN2 as the focal product. The characteristics of ISDN2 lines are described in paragraphs 5.14 to 5.18 above.

Direct competitive constraints

Demand-side substitution

5.57 Other types of exchange lines, such as ISDN30 and IP-based technologies, do not provide a direct demand-side substitute, as ISDN2 exchange line retailers need to buy wholesale ISDN2 inputs in order to supply their ISDN2 retail customers. However, switching at the retail level to these services does potentially impose an indirect constraint on prices at the wholesale level. This is considered in the next sub-section.


Supply-side substitution

5.58 To warrant inclusion in the relevant market, supply-side substitution to an alternative product needs to be both technically feasible and economically likely. Any form of access network could in principle be upgraded to provide ISDN2 access. However, as discussed in the context of the retail market in paragraphs 5.45 to 5.46, we do not consider this to be likely. The main reason for this is that it is unlikely to be economically viable to invest in network upgrades when ISDN2 is in decline, as this limits the period within which to recover these costs. As a result we do not consider alternative services warrant inclusion in the relevant economic market.

Indirect competitive constraints

5.59 The demand for fixed wholesale ISDN2 exchange lines is ultimately derived from the demand for retail ISDN2 exchange lines. Even if a CP has no realistic alternative but to buy exchange lines from a hypothetical monopoly provider, it may not be profitable for the hypothetical monopolist to raise wholesale prices above the competitive level if doing so were to lead to higher retail prices and a significant drop in the retail demand for exchange lines. In such circumstances it would be appropriate to include such indirect competitive constraints in the definition of the relevant economic market.

5.60 In our assessment of the retail ISDN2 market we accepted that there is a degree of substitutability with IP-based services and that this may be increasing over time. Nonetheless, we have concluded that other products, including IP-based services, do not provide a constraint on retail ISDN2 prices sufficient to warrant inclusion in the relevant retail market. Similarly, we also consider that they are unlikely to exert a sufficiently strong indirect constraint to warrant inclusion in the relevant wholesale market. We also note above the likelihood that, absent regulation at the wholesale level, retail price discrimination would mitigate the extent to which consumers switch to alternative products. This is likely to further weaken any indirect constraints. Accordingly, we consider that other products are unlikely to exert a sufficiently strong indirect constraint to warrant inclusion in the relevant wholesale market. There is not likely to be sufficient switching at the retail level, given our analysis of that market, such that wholesale ISDN2 prices are sufficiently constrained.

Conclusion on wholesale product market definition

5.61 Our market definition analysis suggests there are no direct demand-side substitutes for wholesale ISDN2 exchange line services and that supply-side substitution is highly unlikely given the sunk costs of upgrading current access networks and declining overall ISDN2 volumes.

5.62 We recognise the growth and increasing importance of IP-based services which pose some indirect constraint on the wholesale price of ISDN2 exchange lines. However we believe that this is not sufficient to warrant inclusion in the relevant market.

5.63 In light of the evidence above and stakeholder responses, our final view is that, for the period of this market review, a wholesale market definition based on ISDN2 exchange line services only is appropriate.
Geographic market definition

5.64 We believe that the same considerations that apply to geographic markets at the retail level also apply at the wholesale level. We therefore find two separate geographic markets:

- the UK excluding the Hull Area; and
- the Hull Area.

Conclusion on wholesale market definition

5.65 In light of the stakeholder responses and analysis above, we conclude that there remain distinct wholesale markets for the provision of:

- ISDN2 exchange line services in the UK excluding the Hull Area; and
- ISDN2 exchange line services in the Hull Area.

Three-criteria test for ISDN2

5.66 The ISDN2 market is not listed in the Relevant Markets Recommendation as a market in which ex ante regulation may be warranted.\(^{214}\) Therefore, taking utmost account of the Relevant Markets Recommendation, we have applied the three-criteria test to assess whether ex ante regulation is appropriate.

Provisional conclusion as set out in the July 2013 FAMR Consultation

5.67 In the July 2013 FAMR Consultation, we provisionally concluded that our market definitions satisfy the criteria set out in the Relevant Markets Recommendation and that it is appropriate to analyse these markets to determine whether any provider holds SMP.

Stakeholder responses to the July 2013 FAMR Consultation

5.68 No stakeholders commented on Ofcom's provisional conclusion on the three-criteria test for the ISDN2 market definitions as set out in the July 2013 FAMR Consultation.

Our analysis and conclusions

5.69 In relation to the wholesale ISDN2 market for the UK excluding the Hull Area we consider that the three criteria set out in the Relevant Markets Recommendation are met:

- the presence of high and non-transitory barriers to entry: we consider that significant barriers to entry remain. This is discussed in more detail in the sub-

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section on barriers to entry and expansion in our analysis of SMP (paragraphs 5.87 to 5.89);

- **a market structure which does not tend towards effective competition within the relevant time horizon**: we conclude that this market does not display a tendency towards competition. In particular, BT has maintained a very high share of the relevant market over time, barriers to entry and expansion remain substantial and there is no effective countervailing buyer power. This is discussed in more detail in our SMP assessment (paragraphs 5.81 to 5.86); and

- **the insufficiency of competition law alone to adequately address the market failure(s) concerned**: we consider that competition law would not be sufficient to address concerns in this market. As noted above, we do not believe this market will tend towards competition within the relevant time horizon and therefore *ex ante* regulation is necessary to promote effective competition (particularly downstream).

5.70 Similarly, we consider that, in relation to the wholesale ISDN2 market for the Hull Area, the three criteria test is met:

- **the presence of high and non-transitory barriers to entry**: as discussed in paragraphs 5.95 to 5.100 below, we consider that significant barriers to entry remain;

- **a market structure which does not tend towards effective competition within the relevant time horizon**: as discussed in more detail in paragraphs 5.95 to 5.100 below, we conclude that this market does not display a tendency towards competition. KCOM has maintained a very high share of the relevant market over time, barriers to entry and expansion remain substantial and there is no effective countervailing buyer power; and

- **the insufficiency of competition law alone to adequately address the market failure(s) concerned**: we consider that competition law would not be sufficient to address concerns in this market. As we explain in paragraphs 5.95 to 5.100 below, we do not believe this market will tend towards competition within the relevant time horizon and therefore *ex ante* regulation is necessary to promote effective competition (particularly downstream).

5.71 In terms of the retail markets, we must also undertake the three criteria test to identify markets that are susceptible to *ex ante* regulation. We set out our consideration of the retail market for ISDN2 in the UK excluding the Hull Area below:

- **the presence of high and non-transitory barriers to entry**: as discussed in paragraphs 5.112 to 5.116, we consider that barriers to entry do not appear to be high, but observe that expansion has been limited (suggesting barriers to expansion exist). While a firm can begin to supply retail ISDN2 services, there appear to be barriers that prevent a firm from obtaining significant scale, i.e. there are barriers to entering the market effectively. Given these indicators, while barriers to entry do not appear to be high, we cannot conclude that they are not

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215 We consider the provision of retail ISDN2 exchange line services in the Hull Area in Section 6.

216 Entry to the market is likely to be less attractive if there are limited prospects for expansion.
significant without conducting a full SMP assessment (which we set out in paragraphs 5.107 to 5.120).

- **a market structure which does not tend towards effective competition within the relevant time horizon**: as discussed in paragraphs 5.107 to 5.111, BT accounts for a high (albeit declining) share of retail ISDN2 connections, whereas other retailers remain very small in comparison to BT. BT has also increased its retail margin over the ISDN2 rental charge (although this has coincided with a loss of retail market share). Given these indicators, we cannot conclude that the market structure tends towards effective competition without conducting a full SMP assessment (which we set out in paragraphs 5.107 to 5.120).217

- **the insufficiency of competition law alone to adequately address the market failure(s) concerned**: given the indications that this market may not tend towards effective competition (as set out in the immediately preceding bullet point), it is possible that competition problems could emerge. If such concerns were to emerge, we consider that competition law would not be sufficient to address them. In particular, if this market does not tend towards competition within the relevant time horizon then *ex ante* regulation may be necessary to promote effective competition.

5.72 The assessment of the three-criteria test in relation to retail ISDN2 in the Hull Area, particularly the first two criteria, is not clear cut, but on balance we are of the view that the three-criteria test is met.

5.73 Therefore on balance, we are of the view that our market definitions in relation to wholesale ISDN2 markets and the retail ISDN2 market in the UK excluding the Hull Area satisfy the criteria set out in the Relevant Markets Recommendation and that it is appropriate to analyse these markets to determine whether any provider holds SMP.

**Conclusions on market definition**

5.74 In light of stakeholder responses to the July 2013 FAMR Consultation and our analysis set out above, and having applied the three criteria test, we identify the following markets for the purposes of making a market power determination:

- a market for wholesale ISDN2 exchange line services in the UK excluding the Hull Area;
- a market for wholesale ISDN2 exchange line services in the Hull Area; and
- a market for retail ISDN2 exchange line services in the UK excluding the Hull Area.

**Wholesale market power assessment**

5.75 Market definition is not an end in itself. Rather, it is a tool to help assess the extent to which operators possess market power. Below we set out our assessment of whether BT and KCOM continue to possess SMP in the ISDN2 markets that we have defined

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217 As discussed below, after a full SMP assessment our view is that BT will not have SMP during the period covered by this market review, although the evidence is finely balanced.
above. In making that assessment we have taken utmost account of the EC SMP Guidelines including the criteria for assessing SMP set out in therein. Our general approach to the assessment of market power is described in Annex 3.

5.76 Annex 3 summarises the criteria for the assessment of SMP. These include market shares, barriers to entry and expansion, prices and profitability and countervailing buyer power. Note also that, as discussed above, we have applied the modified Greenfield approach when carrying out our wholesale market power assessment. We have thus considered CPs’ market position absent the presence of SMP remedies at the wholesale level.

**Provisional conclusion as set out in the July 2013 FAMR Consultation**

5.77 In the July 2013 FAMR Consultation, our provisional conclusion was that:

- BT holds SMP in the wholesale supply of ISDN2 exchange line services in the UK excluding the Hull Area; and
- KCOM holds SMP in the wholesale supply of ISDN2 exchange line services in the Hull Area.

**Stakeholder responses to the July 2013 FAMR Consultation**

5.78 EE\(^{218}\), the FCS\(^{219}\), TalkTalk\(^{220}\), Verizon\(^{222}\) and Virgin\(^{223}\) agreed with Ofcom’s analysis in the July 2013 FAMR Consultation that BT and KCOM had SMP in the wholesale ISDN2 market.

5.79 While BT broadly agreed with Ofcom’s view that it had SMP in the wholesale ISDN2 market, it argued that the market was in “terminal” decline and faced strong competitive pressure from new substitute products. As a result, BT urged Ofcom to consider whether there was justification for continuing to find SMP at the wholesale level.\(^{224}\)

5.80 KCOM expected significant competitive constraints on the wholesale ISDN2 market in the Hull Area from alternative fixed access infrastructure. KCOM argued that the current network deployment by MS3 had the potential to have a significant impact on

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\(^{218}\) P.5, *EE response to the July 2013 FAMR Consultation*,
[http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf).

\(^{219}\) P.3, *FCS response to the July 2013 FAMR Consultation*,

\(^{220}\) [\^][\^]

\(^{221}\) Paragraph 4.1, *TalkTalk response to the July 2013 FAMR Consultation – other issues*,

\(^{222}\) Paragraph 14, *Verizon response to the July 2013 FAMR Consultation*,

\(^{223}\) P.7, *Virgin response to the July 2013 FAMR Consultation*,

\(^{224}\) Paragraphs 135-137, *BT response to 2013 FAMR Consultation*,
[http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf).
its business both at the retail and wholesale level during the period covered by this market review.\footnote{P.3, KCOM response to the 2013 FAMR Consultation, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/KCOM.pdf}. For more details see Section 3, paragraph 3.98.}

\section*{ISDN2 market power assessment in the UK excluding the Hull Area}

\subsection*{Market shares}

5.81 In the 2009 Wholesale Narrowband Statement we found BT to have a market share of almost 100\% in the wholesale market for ISDN2. Our understanding is that there has not been any significant entry since then and so market conditions remain the same. It is reasonable to presume that a firm who serves such a significant proportion of the market is likely to hold SMP.

5.82 BT is increasingly marketing its IP-based services. However, given the boundaries of the market that we have defined, this does not necessarily lead to a finding that BT does not have SMP in the relevant wholesale ISDN2 market. Rather, it leads to an inference (consistent with that set out in paragraph 5.34 above) that the number of people using ISDN2 will fall in the period covered by this review.

5.83 As discussed above, we accept that there is a degree of substitutability with IP-based services but do not consider that it is sufficiently strong to warrant the inclusion of these services within the relevant market. Nonetheless, for the sole purposes of assessing an upper bound for the extent of the constraint that IP-based services may exert, we have also considered the impact on market shares if we were to include SIP Trunking (the likely closest substitute to ISDN2).\footnote{We adopted a similar approach when considering the constraints imposed by ‘out of market’ products in Paragraphs 2.226-2.227, Ofcom, Pay TV phase three document, 26 June 2009, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/third_paytv/annexes/annex8.pdf}.}

5.84 Even after including SIP Trunking, BT would have had a share of supply of 52\% in September 2013.\footnote{This share is calculated using the sum of Openreach’s wholesale ISDN2 volumes and SIP Trunking volumes. Openreach’s volumes for wholesale ISDN2 and SIP Trunking were provided in response to questions 3.3 and 3.4 of the s.135 notice of 26 November 2012, updated in response to question 2.2 of the s.135 notice of 12 February 2014. Volumes for the total SIP/IP Trunking market were provided by Illume Research in March 2014. We believe this approach to be appropriate as we are simply using the figures to observe a general trend in volumes and calculate a hypothetical market share based on an alternative market definition.} This remains sufficiently high enough to give rise to a presumption of SMP. Importantly, this 52\% figure overstates the constraint from SIP Trunking, as we have found it to be outside the relevant market. Accordingly this 52\% figure is likely to understate the extent of BT’s market power.

5.85 We recognise that, using BT’s own forecasts of SIP Trunking and wholesale ISDN2, this share of supply figure is likely to decline over time as a consequence of forecast growth in IP-based services. This is reflected in BT’s response to the July 2013 FAMR Consultation, where it argued that the wholesale ISDN2 market is in “terminal decline” and that there is strong competitive pressure from substitute products. However, we remain of the view that BT is likely to enjoy a position of SMP during the period covered by this market review for two reasons. First, as noted above, shares of supply calculated on this basis are likely to underestimate the extent of BT’s market power and, in any event, are sufficiently high to give rise to a presumption of...
SMP. Second, BT appears particularly well placed to convert its current ISDN2 customers to SIP Trunking (as discussed above) and would be well placed to maintain its high market share even if SIP Trunking did become part of the relevant market in the future.

Moreover, as discussed above, there are significant difficulties in forecasting volumes for relatively new products such as BT’s SIP Trunking service. This suggests that we should not give too much weight to the future shares of supply calculated on the basis of uncertain forecasts about ISDN2 volumes and SIP Trunking.

Barriers to entry and expansion

We consider the barriers to entry are similar to those identified for wholesale ISDN30. Barriers to entry and expansion are high due to the large sunk costs that would need to be incurred to establish the infrastructure required to provide an ISDN2 exchange line. Given the forecast decline in ISDN2 volumes, there is a limited time period within which to recover this investment and limited customer volumes over which to recover these sunk costs.

Further, declining demand for ISDN2 means that there are fewer customers which new entrants could attempt to attract. In order to attract customers a new entrant would need to persuade existing ISDN2 customers of competitors to switch supplier, rather than attracting customers that currently do not buy ISDN2. This is likely to increase the obstacles to new entrants winning sufficient business.

Finally, while it is possible for new entrants to offer ISDN2 over LLU, there are non-trivial costs required to upgrade equipment to offer ISDN2 functionality. As noted above, declining ISDN2 volumes mean the time period within which to recover this investment is limited, and therefore unlikely to be economically viable.

Prices and profitability

In the July 2013 FAMR Consultation we set our analysis of BT’s profitability of providing ISDN2 services. Based on the evidence presented at the time, we concluded that BT was able to earn returns in excess of its cost of capital. Since the time of the consultation, Openreach’s wholesale charges for ISDN2 have fallen by £2.52 (£52.98/line per quarter as of 1 April 2014). We have decided not to update our analysis of BT’s profitability given our concerns about the reliability of the 2012/2013 Regulatory Financial Statement (‘RFS’) (see Volume 2 for further details).

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228 Paragraphs 5.81-5.82, Ofcom, Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - Consultation on the proposed markets, market power determinations and remedies, 3 July 2013. http://stakeholders.ofcom.org.uk/binaries/consultations/ixed-access-market-reviews/summary/ixed-access-markets.pdf.

229 http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=HC2PKXbjiBt1dq1YzoSm51Z9Krov%2BTHKFc9vGGiKfKlOILMnGAlsodC0vzO163bJmh34D91D7Mqq8u%2F%0AIISggtlFAKw%3D%3D.
Countervailing buyer power

5.91 Purchasers of BT’s wholesale ISDN2 service are highly unlikely to possess sufficient countervailing buyer power to undermine BT’s market power given the lack of alternative suppliers.

5.92 BT’s largest buyer of wholesale ISDN2, other than its own downstream retail business, only accounts for approximately [\%]% of wholesale ISDN2 sales.\(^{230}\) This further reinforces our view that countervailing buyer power is unlikely.

Conclusions

5.93 In conducting the SMP assessment set out above we have found that:

- BT continues to have a market share of almost 100% in the wholesale market for ISDN2;
- barriers to entry and expansion remain high due to the large sunk costs that would need to be incurred to establish the infrastructure required to provide an ISDN2 exchange line; and
- there remains a lack of countervailing buyer power.

5.94 In light of the analysis above and taking stakeholder responses to the July 2013 FAMR Consultation into account, our conclusion is that BT continues to have SMP in the supply of wholesale ISDN2 exchange lines in the UK excluding the Hull Area.

ISDN2 market power assessment in the Hull Area

5.95 In the 2009 Wholesale Narrowband Statement we found KCOM continued to enjoy SMP despite some entry via PPCs and radio links. We do not consider KCOM’s position of market power has been eroded significantly since then as we are not aware of any material entry into the market.

5.96 In response to the July 2013 FAMR Consultation, KCOM stated that the current network deployment undertaken by MS3 in the Hull Area is more extensive than Ofcom had previously considered and has the potential to significantly impact KCOM’s business over the period of this review. Although MS3 has not stated explicitly that it intends to offer ISDN2 exchange line services, this is technically possible over a fibre network.\(^{231}\)

5.97 As explained in Section 3 (paragraph 3.147), we consider that MS3 is unlikely to gain significant market share and thus exert a sufficiently strong competitive constraint such that KCOM ceases to enjoy SMP in the wholesale supply of ISDN2 in the Hull Area during the period covered by this review. We thus believe that KCOM will continue to enjoy a very strong market position in the Hull Area.

5.98 Aside from MS3, barriers to entry in this market appear relatively high as ISDN2 is a declining product. Any new entrant wishing to enter the market would need to invest

\(^{230}\) BT response to question 2 of the s.135 notice of 28 March 2013.

considerably in rival infrastructure to KCOM, and, given the small geographic area and declining ISDN2 volumes, would likely have a limited customer base and limited time period within which to recover these costs.

5.99 Any form of countervailing buyer power is unlikely given KCOM is the most significant wholesale supplier of ISDN2 in the Hull Area and any single customer is unlikely to account for such a proportion of their customer base as to be able to exploit buyer power.

5.100 In light of the analysis above and taking stakeholder responses to the July 2013 FAMR Consultation into account, we conclude that KCOM continues to hold SMP in the wholesale supply of ISDN2 exchange line services in the Hull Area.

Retail market power assessment for the UK excluding the Hull Area

5.101 In this sub-section we consider the effectiveness of competition in the provision of ISDN2 retail services in the UK excluding the Hull Area. This assessment will inform our decision as to whether any firm has SMP, either individually or collectively. Where SMP is found, we are obliged to consider which regulatory obligations may be required to address the lack of effective competition in the market. We conduct this assessment at the retail level assuming the wholesale remedies set out in this Statement are in place.

Provisional conclusion as set out in the July 2013 FAMR Consultation

5.102 In the July 2013 FAMR Consultation, our provisional conclusion was that no operator holds SMP in the supply of retail ISDN2 exchange lines in the UK excluding the Hull Area.

Stakeholder responses to the July 2013 FAMR Consultation

5.103 Virgin agreed that, given our assessment that appropriate wholesale remedies provide a competitive retail environment, BT did not hold SMP in the retail ISDN2 market.\(^{232}\) TalkTalk agreed with our analysis of the ISDN2 market.\(^{233}\) BT also agreed that it did not possess SMP in the retail ISDN2 market due to a decline in the market by volume and value as customers migrated to IP-based alternatives. BT stated that it estimated BT Business’s share of retail ISDN2 lines was \([\%]\) by volume and \([\%]\) by value in 2012/13. It stated that BT Global Services’ volumes of ISDN2 channels for large business customers fell from \([\%]\) to \([\%]\) between August 2011 and August 2013. BT also quoted the International Data Corporation’s latest UK forecasts of -6% for the period 2012-2017 for the compound annual growth rate of ISDN2 business channels. BT argued that it expected the rate of customer migrations away from ISDN2 was likely to accelerate as customers became reassured about the ability of IP-based services as a substitute for ISDN2. In addition, BT noted that ISDN2 was no longer a growth product in its portfolio and that customer demand for IP-based services will mean that ISDN2 will no longer be actively promoted. BT argued that “pricing will continue to be heavily constrained by


the IP based access alternatives, especially as fibre becomes more ubiquitous, but rising costs from aging infrastructure will need to be addressed over time.”

5.104 However, Verizon disagreed with Ofcom’s provisional conclusion as it considered there to be considerable barriers to entry limiting the scale of such entry. In particular, it argued that “no retail rival to BT has been able to attain significant scale, suggesting that any competitive pressure on BT is extremely limited and unlikely to increase significantly over the period covered by the current review.”

5.105 [x] disagreed with Ofcom’s provisional conclusion that BT no longer holds SMP in the retail ISDN2 market, and considered that, absent regulation at the retail level, BT would be able “to undercut innovative, more flexible and more beneficial new technologies”. It referenced the removal of the retail SMP condition on BT’s ISDN30 product in the last market review as evidence of this, as it argued that it allowed BT to unreasonably delay investment in the next generation market and instead treat existing assets as a “cash cow”, to the detriment of businesses and consumers.

5.106 EE agreed with Ofcom’s analysis in the July 2013 FAMR Consultation that the evidence as to whether BT will continue to have SMP in the retail ISDN2 market during the period of this market review was finely balanced. However, EE argued that BT’s market share in the retail ISDN2 market remained very high and so BT was likely to continue to enjoy SMP during the period covered by this market review.

### Market Shares

Table 5.2: BT market share of retail ISDN2 market

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<tbody>
<tr>
<td>Total channels</td>
<td>1,297,018</td>
<td>1,245,591</td>
<td>1,141,740</td>
<td>1,140,308</td>
<td>1,137,835</td>
</tr>
<tr>
<td>BT</td>
<td>896,103</td>
<td>783,623</td>
<td>640,549</td>
<td>616,257</td>
<td>556,944</td>
</tr>
<tr>
<td>Others (WLR resellers)</td>
<td>400,915</td>
<td>461,968</td>
<td>501,191</td>
<td>524,051</td>
<td>580,944</td>
</tr>
<tr>
<td>BT market share</td>
<td>69%</td>
<td>63%</td>
<td>56%</td>
<td>54%</td>
<td>49%</td>
</tr>
</tbody>
</table>

Source: BT Regulatory Financial Statements

5.107 In the 2009 Retail Narrowband Statement we found that BT had a 69% retail market share. Using the wholesale volumes reported in BT’s published accounts and assuming that other retailers all buy ISDN2 from Openreach (given their near 100% wholesale market share), we have determined that BT’s retail market share has, since the last review, declined by 20% to 49%.

5.108 In its response to the July 2013 FAMR Consultation, EE argued that BT’s market share of retail ISDN2 remains very high and so it is likely to continue to enjoy SMP in this market. However, while market share is an indicator of market power, high

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237 Figures exclude Virgin which we estimate to only comprise a very small proportion of the market.
market share alone is not sufficient to establish the possession of SMP. Rather, a range of relevant factors should be taken into account when assessing market power (we discuss other factors further below). Additionally, as noted above, BT’s market share has declined over the period covered by the last market review, and this may well continue in this review period (such that for the next review period it could be closer to or even below the level at which dominance is typically found).

5.109 BT provided us with details of its five largest buyers of the wholesale ISDN2 product. This showed that BT was the most significant retail supplier (as highlighted in the market shares above), but that the second largest retail supplier only accounted for about 3% of the retail market. This suggests that, although BT is the single leading retail supplier, many much smaller suppliers also operate in the retail ISDN2 market.

5.110 As discussed above, we accept that there is a degree of substitutability between ISDN2 and IP-based services but do not consider that it is sufficiently strong to warrant the inclusion of these services within the relevant market. Nonetheless, for the sole purpose of assessing an upper bound for the extent of the constraint that IP-based services may exert, we have also considered the impact on market shares were we to include SIP Trunking (the likely closest substitute to ISDN2). In September 2013, BT had a share of supply of 25%, which demonstrates that any additional constraint on BT’s 49% market share reduces its market power towards the level at which dominance is unlikely to be found. However, it is important to note that this 25% figure overstates the constraint from SIP Trunking, as we have found it to be outside the relevant market.

5.111 In its response to the July 2013 FAMR Consultation, BT argued that customers adopt a ‘testing the water’ approach before full implementation of IP-based services, and so there will be a sharper decline in ISDN2 volumes in the future (see paragraph 5.103). Since the last market review, the total number of channels in the retail ISDN2 market has been steadily declining at an average rate of 3% per year, and we consider that this general decline is likely to continue (as discussed above). While we acknowledge that a transitional dual running of services may occur, we consider it would be highly speculative at this stage to conclude that this review period is likely to be characterised by an accelerated decline, particularly in light of expected consumer preferences during the period of this market review set out in paragraphs 5.35 to 5.41.

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239 There are a range of relevant factors for assessing market power. See for example paragraph 75-78 of EC, Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services (2002/C 165/03), 11 July 2002, www.eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2002:165:0006:0031:EN:PDF.

240 BT response to the question 3.5 of the s.135 notice of 26 November 2012, updated in response to question 2.1 of the s.135 notice of 12 February 2014.


242 BT’s share was calculated using BT’s volumes for both retail ISDN2 and SIP Trunking, and the total market size was calculated using BT’s wholesale ISDN2 volumes and Illume Research’s SIP/IP Trunking volumes. See also footnote 227, in the context of BT’s wholesale ISDN2 market share.
Barriers to entry and expansion

5.112 In its response to the July 2013 FAMR Consultation, Verizon noted that, although other retailers (as a whole) were able to grow at BT’s expense, none has been able to attain significant scale (see paragraph 5.104). Although no other CP has attained significant scale, we consider that this reflects the fact that retail ISDN2 provision is a declining market and that CP’s are focusing their efforts on marketing IP-based services which are generally considered to be the successor to ISDN2. Accordingly, Verizon’s submission does not alter our interpretation of the evidence underpinning our view that barriers to entry and expansion are unlikely to be high.

5.113 As noted in the 2009 Retail Narrowband Statement, there has been substantial entry into the ISDN2 market by resellers in the past.243 However, ISDN2 is a declining product with established resellers (particularly BT) and therefore in order to attract customers a new entrant would need to persuade existing ISDN2 customers of other retailers to switch their supplier, rather than attract customers that currently do not buy ISDN2.

5.114 In terms of barriers to expansion, as shown in Table 5.2 BT has lost a reasonable amount of market share between 2008/9 and 2011/12 (a decline of 20 percentage points to 49%). This suggests that the barriers to BT losing customers are modest and that there is scope for other retailers (in aggregate) to expand at BT’s expense.

5.115 However, this decline in BT’s market share has not led to any large rival retailers emerging in the ISDN2 market. As noted in paragraph 5.109 above, the second largest retail supplier (after BT) only accounts for around [%]% of the market.

5.116 Overall, following detailed analysis of the relevant market, we consider that barriers to entry and expansion are unlikely to be high. There is evidence that rival retailers (as a whole) have been able to grow at BT’s expense over recent years, although no rival retailer has been able to attain significant scale.

Prices and profitability

5.117 In its response to the July 2013 FAMR Consultation, BT argued that the pricing of ISDN2 will be constrained by IP-based services for the period covered by this market review.244 However, this is not evident from the margin earned by BT between its retail and wholesale prices. Wholesale rental charges for ISDN2 have decreased by £2.02 since 2004 (to £52.98 per quarter), but retail prices have increased by a significantly larger margin in the same time period. On 1 November 2008 the retail charge for a 1 year tariff was £100.89 (excl. VAT) per ISDN2 line per quarter;245 effective from 1 April 2014 the charge was £129.30 for the same tariff.246 This

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245 BT’s one year contract low-start tariff.

represents an increase of approximately 28% over the period, or around 5% per year.

5.118 As a result, BT’s margin over wholesale access costs has increased. BT’s price cost margin in 2008 was 45%, based on a one year low start tariff; this has increased to 59% in 2014 based on the same tariff.

5.119 We recognise that this increase in BT’s margins has coincided with a decline in BT’s retail market share (as set out above). This suggests that some of BT’s customers have switched to other ISDN2 retailers, as well as to IP-based services. Nonetheless the fact that BT has chosen to increase its margin between retail and wholesale prices suggests that it believes it was profitable to do so.

Countervailing buyer power

5.120 BT has provided us with details of its 10 largest retail customers of ISDN2 lines which shows that the largest of BT’s retail customers only accounts for less than % of its total customer base (in number of lines). Therefore we consider it unlikely that any company buying retail ISDN2 would be able to exercise buyer power to any significant extent.

Conclusions

5.121 In light of the analysis above and taking stakeholder responses to the July 2013 FAMR Consultation into account, we maintain our view that the evidence as to whether BT will continue to enjoy SMP in the retail supply of ISDN2 during the period covered by this market review is finely balanced.

5.122 On balance, we consider that BT is unlikely to maintain SMP at the retail level for the duration of the time period covered by this review. We note that BT has managed to increase its price-cost margin on retail ISDN2 (which coincides with the continuing decline in its market share) and faces little in the way of countervailing buyer power. However, while other ISDN2 retailers have not obtained a large scale, entry into the market has occurred. Indeed, in the period since the last review BT’s market share has fallen by 20% as consumers have switched to rival ISDN2 retailers. Should the decline over this period continue at the same rate, BT may have a market share of less than 40% within the forward look period. Over the period covered by this market review, the influence of IP-based alternatives may also place additional constraints on retail pricing of ISDN2. Taking all this evidence into account, we consider that on balance a finding of no SMP is appropriate in this market during the period of the market review.

5.123 In its response to the July 2013 FAMR Consultation, argued that the removal of retail SMP conditions on BT’s ISDN2 product would lead to BT unreasonably delaying investment in next generation technology and either treating ISDN2 as a

248 Based on a retail price of £129.30 per quarter for BT’s low start tariff on a 1 year contract (price effective from 1 April 2014, and a wholesale price of £52.98 per quarter per ISDN2 exchange line). Prices correct as of 17 March 2014.
249 BT response to question 2 of the s.135 notice of 28 March 2013.
“cash cow” or undercutting IP-based services. It is important to recognise that the assessment of whether or not market power exists should be carried out before any assessment of remedies. [×] submissions do not address the issue of whether SMP exists at the retail level (for example, by considering the extent of the constraints on BT’s retail ISDN2 business). Indeed, its arguments about encouraging BT to invest in new technologies actually appear to relate to upstream markets. Accordingly, [×] submissions do not alter our interpretation of the evidence underpinning our view that BT will not possess SMP at the retail level for the duration of the time period covered by this review.

5.124 Our conclusion is thus that no operator holds SMP in the supply of retail ISDN2 exchange lines in the UK excluding the Hull Area.
Section 6

Market definition and SMP analysis: Retail markets in the Hull Area

6.1 This section covers our assessment of various retail markets in the Hull Area. We have presented this analysis separately as we have concluded that these markets fail to satisfy all three criteria in the test set out in the Relevant Markets Recommendation. Accordingly, we conclude that it is not appropriate to impose *ex ante* regulation in these markets.

6.2 We discuss each of the following markets in the Hull Area in turn:

- retail fixed analogue exchange lines;
- retail ISDN30 exchange line services; and
- retail ISDN2 exchange line services.

Regulatory framework

6.3 The retail markets set out in paragraph 6.2 above are not listed in the Relevant Markets Recommendation as markets in which *ex ante* regulation may be warranted.\(^{250}\) Therefore, taking utmost account of the Relevant Markets Recommendation, we have applied the following three-criteria test to the retail markets in the Hull Area in order to assess whether *ex ante* regulation is appropriate:

- the presence of high and non-transitory barriers to entry. These may be of a structural, legal or regulatory nature;
- a market structure which does not tend towards effective competition within the relevant time horizon. The application of this criterion involves examining the state of competition behind the barriers to entry; and
- the insufficiency of competition law alone to adequately address the market failure(s) concerned.

6.4 The three-criteria test approach that we applied is set out in detail in paragraphs 3.82 to 3.84.

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Retail fixed analogue exchange lines in the Hull Area

Provisional conclusion as set out in the July 2013 FAMR Consultation

6.5 Our provisional conclusion was that, for the period of this market review, competition law is sufficient to address any competition concerns in residential fixed narrowband analogue access in the Hull Area and business fixed narrowband analogue access in the Hull Area.\(^{251}\) As a result, we provisionally concluded that ex ante regulation is no longer appropriate and proposed removing the existing remedies:

- no undue price discrimination; and
- price publication.

Stakeholder responses to the July 2013 FAMR Consultation

6.6 The FCS agreed with Ofcom’s assessment that it was not appropriate to impose retail regulation on residential fixed narrowband analogue access and business fixed narrowband analogue access in the Hull Area.\(^{252}\)

6.7 KCOM also agreed with Ofcom’s assessment that retail SMP regulation was not appropriate in these markets in the Hull Area due to the sufficiency of competition law. In addition, KCOM considered that Ofcom’s powers as a competition authority should “give comfort to stakeholders in the Hull market upon lifting retail SMP obligations”.\(^{253}\)

6.8 In light of Ofcom’s proposed removal of the retail SMP remedies, KCOM also submitted that the voluntary undertakings on retail bundling that it offered in 2010\(^{254}\) will “no longer be valid” since they were predicated on KCOM being subject to a retail SMP condition prohibiting undue discrimination. KCOM stated it would be useful for Ofcom to confirm its view on this.

6.9 [\(^{255}\)] commented that the continuing dominance of KCOM in these markets in the Hull Area presented “empirical proof that the remedies enacted are clearly not effective”.\(^{255}\)

Introduction to our analysis and conclusions

6.10 The analysis set out below covers the supply of fixed narrowband analogue access to business and residential consumers in the Hull Area. Fixed narrowband analogue access comprises the provision of an analogue exchange line service in the form of a telephone connection (typically a single 64 kbit/s channel) from a customer’s premises to a local aggregation point (e.g. local exchange) in the access network.

\(^{251}\) Narrowband access services are another name for analogue exchange line services.

\(^{252}\) Section 2, FCS response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Federation_of_Communication_Services_Ltd.pdf.

\(^{253}\) P.4, KCOM response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/KCOM.pdf.


\(^{255}\) [\(^{255}\)]
This connection provides consumers with the capability to consume other telephony services in the form of telephone calls, facsimile and dial-up internet access.

6.11 We reviewed the retail position in the 2009 Retail Narrowband Statement and found that KCOM had SMP. We concluded that it was appropriate at that time to impose SMP regulation on KCOM as a result. However, we now consider that the supply of fixed narrowband analogue access to business and residential consumers in the Hull Area is a market in which the imposition of ex ante regulation no longer remains appropriate.

6.12 The analysis below is set out as follows:

- a summary of the position in the previous market review;
- relevance of the 2013 Narrowband Statement;
- identification of the appropriate frame of reference for the three criteria test;
- application of the three criteria test; and
- our conclusions, taking into account stakeholder responses to the July 2013 FAMR Consultation.

Position in the previous market review

6.13 We last reviewed fixed narrowband analogue access markets in the 2009 Retail Narrowband Statement and concluded that there were two separate markets for retail narrowband access services in the Hull Area. We found that mobile and VoIP were both outside these markets, and as a result we defined the markets as follows:

- residential fixed narrowband analogue access; and
- business fixed narrowband analogue access.

6.14 We found that KCOM had SMP in both the residential and business fixed narrowband analogue access markets in the Hull Area due to the lack of alternative providers at that time and significant barriers to entry. We therefore retained the existing general remedies (no undue discrimination and price publication) on KCOM in these markets.

2013 Narrowband Statement

6.15 We reviewed the retail market for narrowband calls in the Hull Area in the 2013 Narrowband Statement.\(^{256}\) This market is very closely linked to the retail market for narrowband access as customers need a fixed line in order to make narrowband calls and typically buy a package of access and calls together. We therefore draw on the analysis conducted in our 2013 Narrowband Statement to inform our analysis in this section. Our position in the 2013 Narrowband Statement was that there were separate retail markets for:

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• residential fixed narrowband calls; and
• business fixed narrowband calls.

6.16 These markets do not appear on the list of relevant markets in the Relevant Markets Recommendation and therefore we assessed whether or not it was appropriate to impose \textit{ex ante} regulation using the three criteria test. We decided that \textit{ex ante} regulation was no longer appropriate as we considered that competition law was sufficient to address market failures that may arise. We noted that given the prices in the UK excluding the Hull Area provided a first order benchmark, it would be relatively apparent if prices in the Hull Area were excessive.

Three-criteria test

6.17 In order to apply the three-criteria test it is necessary to have a frame of reference. In other words, it is necessary to identify the products and geographic area that is evaluated against the three criteria in that test. We identify below an appropriate frame of reference in relation to fixed narrowband analogue access. Having done so, we then go on to assess whether or not the supply of business and residential fixed narrowband analogue access services in the Hull Area are markets in which regulatory obligations may be appropriate.

Frame of reference for the three-criteria test

Product market

6.18 In this market review we have taken the definitions set out in the 2009 Retail Narrowband Statement as the starting point for our analysis. As set out above, we defined separate markets for business and residential fixed analogue access in the 2009 Retail Narrowband Statement. We did not consider that alternative networks (including mobile) exercised a direct constraint at the retail level such that they should be included in the definition of the relevant market.

6.19 In the analysis of indirect constraints on WFAELs set out in paragraphs 3.26 to 3.51, we find that switching at the retail level to both mobile access and VoIP over broadband is likely to be limited for both residential and business users within the period covered by this review.

6.20 This suggests that our 2009 Retail Narrowband Statement market definitions remain an appropriate frame of reference for applying the three criteria test. We therefore assess this test below by reference to the following products:

• residential analogue exchange line services; and
• business analogue exchange line services.

Geographic market

6.21 In the 2009 Retail Narrowband Statement, we concluded that the relevant geographic market for business and residential analogue access was the Hull Area. We have not identified any changes which would call into question those conclusions either at the present time or during the period of this review. We thus consider that the Hull Area remains an appropriate frame of reference.
Application of the three-criteria test

Presence of high and non-transitory barriers to entry

6.22 KCOM is currently subject to a range of wholesale and retail remedies. While there have been clear regulatory mechanisms in place to allow competing CPs to supply retail analogue exchange lines in the Hull Area, there has been limited uptake of wholesale products to provide these retail services. At the end of 2011/12, KCOM accounted for over 90% of business fixed narrowband analogue access services and 100% of residential fixed narrowband analogue access services in the Hull Area.257

6.23 There are economic barriers in place that limit the extent to which competition can develop in the Hull Area. The Hull Area has a relatively small population and, particularly in competition with an incumbent, another CP would find it challenging to gain market share rapidly. When set against the systems integration that would be required to enter the market, there is a structural barrier to entry.

6.24 There is a degree of retail competition in the business sector resulting from the presence of resellers in this segment. However, KCOM's high market share for both residential and business customers and the lack of market entry in the residential market suggest that there have not been significant changes to the economic barriers to entry in the Hull Area.

6.25 In response to the July 2013 FAMR Consultation, KCOM stated that the current network deployment undertaken by MS3 in the Hull Area is more extensive than Ofcom had previously considered and has the potential to significantly impact KCOM’s business over the period of this review, potentially in the residential market as well as the business market.258

6.26 As explained in Section 3 (paragraph 3.147), we consider that MS3 is unlikely to gain a significant wholesale market share. This also implies that, at the retail level, MS3’s entry is unlikely to create a sufficiently strong competitive constraint such that KCOM ceases to enjoy a very strong position in the supply of retail fixed narrowband analogue access services in the Hull Area during the period covered by this review.

6.27 In consequence, we continue to consider that there are high and non-transitory barriers to entry in the markets for retail fixed analogue access in the Hull Area.

Market structure which does not tend towards effective competition within the relevant time horizon

6.28 As set out above, KCOM accounts for a very high share of fixed narrowband analogue access services in the Hull Area. While the entry of MS3 might increase the limited competitive constraints faced by KCOM in the retail market, for the reasons...

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257 KCOM reported in its regulated accounts external sales of 3,000 lines in 2011/12. This represents just under 2% of total lines in Hull, and just under 8% of business lines in Hull. This figure is attributable to resellers who are active in the business market. See page 11, KCOM, 2011/12 Regulatory Financial Review, www.kcomplc.com/docs/regulatory-pdf/final_statements_2012.pdf.

We have no reason to believe that this has changed significantly since our analysis for the July 2013 FAMR Consultation.

6.29 In light of the above, we continue to consider that the retail market for fixed narrowband analogue access services in the Hull Area exhibits a market structure which does not tend towards effective competition over the period of this review.

**Sufficiency of competition law**

6.30 The third criterion relates to whether competition law is sufficient alone to adequately address market failure(s). We conclude that *ex ante* regulation is no longer appropriate for the business and residential fixed narrowband analogue access services markets in the Hull Area as we consider that competition law would be sufficient on its own to address market failures which arise in these markets. Our reasoning is set out below.

6.31 If KCOM did engage in conduct amounting to an abuse of a dominant position, particular conduct which sought to exclude competitors at the retail level, we consider that competition law would provide a sufficient means of addressing this behaviour. Regarding pricing concerns in particular, we consider prices in the rest of the UK provide a relevant (first order) benchmark for competitive retail rates that would assist in identifying excessive pricing in the Hull Area. This means that any potentially excessive increase in price could be identified by Ofcom or brought to our attention by affected consumers. In addition, retail competitors would be able to indicate the existence of targeted KCOM discounts which would assist in identifying conduct that might constitute exclusionary behaviour.

6.32 In 2010, we relaxed regulation in relation to KCOM’s ability to offer bundles including fixed calls and fixed access.259 Since that change we have not received any complaint or dispute submission meeting our guidelines’ requirements sufficient to trigger an inquiry (the process of deciding whether to conduct an investigation) in relation to KCOM’s commercial practices at the retail level. Further, we note that Ofcom has rarely been required to use its *ex ante* powers in relation to KCOM and it therefore appears disproportionate to impose these on KCOM again, particularly given our conclusion in the paragraph 6.31 above.

6.33 We note that, while the current *ex ante* regulation in this market (no undue discrimination and price publication) does not seem to have been effective in terms of promoting substantial entry in the Hull Area, the prices charged by KCOM appear to be in line with those charged by BT and British Sky Broadcasting (‘Sky’) (Table 6.1 below). This suggests that, even in the absence of significant direct competitors, KCOM’s prices for retail access and related bundles remain aligned with national prices.260 This supports our view that *ex ante* regulation is unnecessary.

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259 The voluntary undertakings are set out in Annex 4 to Ofcom, *Retail Bundling in Hull*, 8 October 2010, 

260 [K] response to the July 2013 FAMR Consultation questioned the efficacy of the existing remedies given KCOM’s continuing “dominance” (as detailed in paragraph 6.9). However, given our view on KCOM’s pricing, and our conclusion on the sufficiency of competition law more generally, we do not consider the efficacy of *ex ante* regulation and consider that [K] submissions do not alter our conclusion that *ex ante* regulation is no longer appropriate.
Table 6.1: Retail packages including narrowband services in Hull and the UK

<table>
<thead>
<tr>
<th>Package Description</th>
<th>KCOM</th>
<th>BT</th>
<th>Sky</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed access plus 24/7 calls package</td>
<td>£13.49 /month including line rental Free local calls 24/7 60 UK mobile minutes to use after 7pm at weekends</td>
<td>£0 + £15.99/month line rental Free weekend UK landline calls Does not include ‘Line Rental Saver’ Price</td>
<td>£0 + £15.40/month line rental Inclusive weekend calls to UK landlines</td>
</tr>
<tr>
<td>Fixed access plus fixed calls and broadband (+33Gb/month usage allowance)</td>
<td>£30.99 per month including line rental Free local calls 24/7 Free UK landline calls on evenings and weekends Broadband with 35Gb monthly usage allowance 120 UK mobile minutes to use a weekends</td>
<td>£16 + £15.99/month line rental Unlimited broadband with up to 16Mb download speed Weekend calls included</td>
<td>£10 + £15.40/month line rental Unlimited broadband with up to 16Mb download speed Inclusive weekend UK landline calls and calls to 0870 numbers</td>
</tr>
</tbody>
</table>

Source: Respective CPs websites. Terms and conditions described are indicative only, and are not intended as a complete description of the price or package options. Prices do not include discounts or special offers. Prices correct as of 3 April 2014

6.34 Taking the considerations set out above into account we consider that competition law alone would be sufficient to address market failures that may arise in the retail markets for fixed analogue exchange lines in the Hull Area. We thus conclude that this criterion is not satisfied.

Conclusion

6.35 In light of the analysis above and taking stakeholder responses into consideration, we conclude that competition law on its own is sufficient to address any competition concerns in residential fixed narrowband analogue access in the Hull Area and business fixed narrowband analogue access in the Hull Area. Accordingly ex ante regulation is no longer appropriate given all the requirements of the three-criteria test are not satisfied. This conclusion is consistent with our conclusion for retail narrowband calls in the Hull Area in the 2013 Narrowband Statement, as well as the views of the FCS and KCOM provided in response to the July 2013 FAMR Consultation (see paragraphs 6.6 and 6.7 respectively). In light of this conclusion we are removing the existing remedies:

- no undue price discrimination; and
- price publication.

6.36 In the 2009 Retail Narrowband Statement, we noted that as a consequence of our interpretation of the no undue price discrimination condition there was a continuing restriction on the bundling of broadband, landline and other retail services in the Hull Area. Since this appeared to impact disproportionately on the choice available to consumers in the Hull Area, we proposed a framework for the deployment of bundled services which would allow greater consumer choice, price reductions, and service
innovations, while avoiding foreclosure of future competitive entry. In 2010, KCOM offered voluntary undertakings in order to ensure that bundled offers which include SMP products did not breach this SMP condition.261

6.37 As noted, KCOM sought in its response to the July 2013 FAMR Consultation clarification from Ofcom about the status of its voluntary undertakings following the removal of the SMP condition prohibiting undue discrimination. Since these undertakings were originally offered by KCOM in order to avoid it breaching this prohibition on undue discrimination (which we are now removing), we consider that KCOM can decide whether it wishes to withdraw them.

Retail ISDN30 exchange line services in the Hull Area

Provisional conclusion as set out in the July 2013 FAMR Consultation

6.38 Our provisional conclusion was that, for the period of this market review, competition law is sufficient to address market failures in the retail supply of ISDN30 exchange line services in the Hull Area. Therefore, we provisionally concluded that ex ante regulation is no longer appropriate and proposed to remove the existing remedies:

- no undue price discrimination; and
- price publication.

Stakeholder responses to the July 2013 FAMR Consultation

6.39 KCOM made the same submissions about the retail supply of ISDN30 exchange line services in the Hull Area as it did for the supply of retail fixed narrowband analogue access services in relation to the sufficiency of competition law and the validity of its voluntary undertakings (see paragraphs 6.7 and 6.8). The FCS and ... also made the same comments in relation to retail ISDN30 exchange line services in the Hull Area as they did in relation to the supply of retail narrowband analogue access services in the Hull Area (see paragraphs 6.6 and 6.9 respectively).

Introduction to our analysis and conclusions

6.40 The analysis set out below covers the retail market for ISDN30 in the Hull Area. We reviewed this market in the 2010 ISDN30 Statement and KCOM was found to hold SMP.262 We concluded that it was appropriate, at that time, to impose SMP regulation on KCOM as a result. We now consider that the retail supply of ISDN30 exchange lines in the Hull Area is no longer a market in which the imposition of ex ante regulation remains appropriate.

6.41 The analysis below is set out as follows:

- application of the three criteria test; and

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our conclusions, taking into account stakeholder responses to the July 2013 FAMR Consultation.

Application of the three-criteria test

6.42 In light of the discussion in Section 4, we have adopted the retail supply of ISDN30 exchange line services in the Hull Area as our frame of reference and applied the three criteria set out in the Relevant Markets Recommendation to assess whether ex ante regulatory obligations may be appropriate. Discussion of these three criteria is set out below.

Presence of high and non-transitory barriers to entry

6.43 We consider that much of the discussion set out in relation to the barriers to entry into the retail market for fixed analogue exchange lines in paragraphs 6.22 to 6.27 above is also applicable to the supply of retail ISDN30 exchange line services in the Hull Area. In particular:

- there are economic barriers in place that limit the extent to which competition can develop in the Hull Area. The Hull Area has a relatively small population and, particularly in competition with an incumbent, another CP would find it challenging to gain market share rapidly; and

- as explained in Section 3, MS3 is currently in the process of entering the wholesale market in the Hull Area. Although MS3 has not stated explicitly that it intends to offer ISDN30 exchange line services, it is technically possible to emulate such a service over a fibre network. However, for the reasons set out in paragraph 3.147, we consider that MS3 is unlikely to gain a significant wholesale market share during the period covered by this market review. This implies that, at the retail level, MS3’s entry is unlikely to create a sufficiently strong competitive constraint such that KCOM ceases to enjoy a very strong position in the retail supply of ISDN30 in the Hull Area during the period covered by this review.

6.44 KCOM is currently subject to a number of SMP conditions in relation to the wholesale supply of ISDN30, including a requirement to provide network access.

6.45 Notwithstanding these wholesale remedies, competition at the retail level in the Hull Area is very limited. KCOM reported in its 2011/12 Regulatory Financial Review that wholesale ISDN30 sales to resellers accounted for 7% of total sales. This suggests that KCOM has a market share at the retail level in excess of 90%. This indicates that it is unlikely there has been any change in the economic barriers to entry in the Hull Area since the last market review. In addition, given the prospects for IP-based services to increase in importance as an alternative to ISDN30 (as discussed in further detail in Section 4 of this Statement), it is increasingly unlikely that significant entry into the retail market for ISDN30 in the Hull Area will occur during the period covered by this market review.

Market structure which does not tend towards effective competition within the relevant time horizon

6.46 We have discussed the barriers to entry into the retail market for ISDN30 in the Hull Area above and concluded they remain high. KCOM also accounts for a high share of retail ISDN30 supply. As we noted in relation to retail fixed narrowband analogue access services in the Hull Area, while the entry of MS3 might increase the limited competitive constraints faced by KCOM in the retail market, for the reasons set out in Section 3 (paragraph 3.147), we consider that during the period of the current market review the entry of MS3 is unlikely to provide a sufficient constraint such that the retail markets in the Hull Area will tend towards effective competition.

Sufficiency of competition law

6.47 We concluded above (in the context of retail fixed narrowband analogue access services in the Hull Area) that competition law was now sufficient to address market failures and therefore that imposition of *ex ante* regulation was no longer appropriate. While the market for ISDN30 is slightly different, much of the reasoning for removing *ex ante* regulation on retail fixed narrowband analogue access services is also applicable to ISDN30. In particular we consider that:

- any competition concerns would become apparent in the absence of regulation due to prices in the rest of the UK providing a relevant (first order) benchmark for competitive retail rates;
- retail competitors would be able to indicate the existence of targeted KCOM discounts which would assist in identifying conduct that might constitute exclusionary behaviour; and
- despite the absence of any pricing regulation in this market, we have not identified any competition concerns at the present time, nor have we received any complaints or disputes which have met our guidelines’ requirements sufficient to trigger an enquiry, in relation to KCOM’s commercial practices at the retail level. We also note that no competition concerns have come to our attention as a result of the removal of regulation in other retail markets in the Hull Area.

6.48 We note that, while the current *ex ante* regulation in this market (no undue price discrimination and price publication) does not seem to have been effective in promoting substantial entry in the Hull Area\(^\text{264}\), the prices charged by KCOM are below those charged by BT. KCOM currently charges £210.00 excl. VAT for “local” ISDN30 (on a per channel basis) when paid via invoice and on a one year contract.\(^\text{265}\) In contrast, BT charges between £253.80 and £289.68 excl. VAT for an approximately equivalent product.\(^\text{266}\) This suggests that, even in the absence of significant direct competitors and price regulation, KCOM is choosing to price at a

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\(^{264}\) As also suggested by \[^\times\] in its response to the July 2013 FAMR Consultation ( see paragraph 6.9).


\(^{266}\) KCOM’s product includes 10 free DDI numbers, with a charge for additional numbers above this, whereas BT’s product includes either zero DDI numbers (lower charge), or unlimited DDI numbers (higher charge). See: [www.business.bt.com/phone-services/isdn/](http://www.business.bt.com/phone-services/isdn/). Prices correct as of 3 April 2014.
level below that found in a market for ISDN30 where competition has been deemed to be effective. This supports our view that *ex ante* regulation is unnecessary.\(^{267}\)

6.49 Taking account of the above, we have concluded that competition law would now be sufficient to address market failures in the retail supply of ISDN30 exchange line services in the Hull Area.

**Conclusions**

6.50 In light of the analysis above and taking stakeholder responses into account, we conclude that competition law on its own is sufficient to address market failures in the retail supply of ISDN30 exchange line services in the Hull Area. Accordingly *ex ante* regulation is no longer appropriate given all the requirements of the three criteria test are not satisfied. This conclusion is consistent with the views of the FCS and KCOM provided in response to the July 2013 FAMR Consultation (see paragraph 6.39).

6.51 For the avoidance of doubt, this conclusion means that the existing remedies imposed on KCOM in the retail market for ISDN30 in the Hull Area will be removed, namely:

- no undue discrimination; and
- price publication.

6.52 In relation to the voluntary undertakings offered by KCOM in 2010, we consider that the same comments set out above regarding the retail fixed narrowband analogue access market should apply in relation to the retail ISDN30 market (see paragraphs 6.36 to 6.37).

**Retail ISDN2 exchange line services in the Hull Area**

**Provisional conclusion as set out in the July 2013 FAMR Consultation**

6.53 Our provisional conclusion was that, for the period of this market review, competition law is sufficient to address market failures in the retail supply of ISDN2 exchange line services in the Hull Area. Therefore, we provisionally concluded that *ex ante* regulation is no longer appropriate and proposed to remove the existing remedies:

- no undue price discrimination; and
- price publication.

**Stakeholder responses to the July 2013 FAMR Consultation**

6.54 KCOM made the same arguments about the retail supply of ISDN2 exchange line services in the Hull Area as it did for the supply of retail fixed narrowband analogue access services in relation to the sufficiency of competition law and the validity of the

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\(^{267}\) As noted in paragraph 6.39, [k] response to the July 2013 FAMR Consultation questioned the efficacy of the existing remedies given KCOM’s continuing “dominance”. However, given our view on KCOM’s pricing, and our conclusion on the sufficiency of competition law more generally, we do not consider the efficacy of *ex ante* regulation and consider that [k:] submissions do not alter our conclusion that *ex ante* regulation is no longer appropriate.
voluntary undertakings (see paragraphs 6.7 and 6.8). The FCS and [... also made the same comments in relation to retail ISDN2 that they did in relation to the supply of retail fixed narrowband analogue access services in the Hull Area (see paragraphs 6.66.6 and 6.9 respectively).

**Introduction to our analysis and conclusions**

6.55 The analysis set out below covers the retail market for ISDN2 in the Hull Area. We reviewed this market in the 2009 Retail Narrowband Statement and KCOM was found to hold SMP. We concluded that it was appropriate at that time to impose SMP regulation on KCOM as a result. We now consider that the retail supply of ISDN2 exchange lines in the Hull Area is no longer a market in which the imposition of *ex ante* regulation remains appropriate.

6.56 The analysis below is set out as follows:

- application of the three-criteria test; and
- our conclusions, taking into account stakeholder responses to the July 2013 FAMR Consultation.

**Application of the three-criteria test**

6.57 In light of the discussion in Section 5, we have adopted the retail supply of ISDN2 exchange line services in the Hull Area as our frame of reference and applied the three criteria set out in the Relevant Markets Recommendation to assess whether regulatory obligations may be appropriate. Discussion of these three criteria is set out below.

**Presence of high and non-transitory barriers to entry**

6.58 We consider that much of the discussion set out in relation to the barriers to entry into the retail market for fixed analogue exchange lines in paragraphs 6.22 to 6.27 above is also applicable to the retail supply of ISDN2 exchange line services in the Hull Area. In particular:

- there are economic barriers in place that limit the extent to which competition can develop in the Hull Area. The Hull Area has a relatively small population and, particularly in competition with an incumbent, another CP would find it challenging to gain market share rapidly; and

- as explained in Section 3, MS3 is currently in the process of entering the wholesale market in the Hull Area. Although MS3 has not stated explicitly that it intends to offer ISDN2 exchange line services, it is technically possible to emulate such a service over a fibre network. However, for the reasons set out in paragraph 3.147, we consider that MS3 is unlikely to gain significant wholesale market share. This also implies that, at the retail level, MS3’s entry is unlikely to create a sufficiently strong competitive constraint such that KCOM ceases to enjoy a very strong position in the retail supply of ISDN2 in the Hull Area during the period covered by this review.

6.59 KCOM is currently subject to a number of SMP conditions in relation to the wholesale supply of ISDN2, including a requirement to provide network access. Notwithstanding these wholesale remedies, competition at the retail level in the Hull Area is very limited. KCOM reported wholesale sales to resellers accounted for 8% of total sales.
In the Hull Area, ISDN2 is sometimes provided using PPCs or radio links, but we consider these are only likely to account for a small proportion of the market. Accordingly, this suggests that KCOM has a market share at the retail level in excess of 90%. This indicates that it is unlikely there has been any change in the economic barriers to entry in the Hull Area since the last review.

In addition, given the prospects for IP-based services to increase in importance as an alternative to ISDN2 (as discussed in Section 5 of this Statement), it is increasingly unlikely that significant entry into the retail market for ISDN2 in the Hull Area will occur.

Market structure which does not tend towards effective competition within the relevant time horizon

We have discussed the barriers to entry into the retail market for ISDN2 in the Hull Area above and concluded they remain high. KCOM also accounts for a high share of retail ISDN2 supply. As we noted in relation to retail fixed narrowband analogue access services in the Hull Area, while the entry of MS3 might increase the limited competitive constraints faced by KCOM in the retail market, for the reasons set out in Section 3 (paragraph 3.147) we consider that, during the period of the current market review, the entry of MS3 is unlikely to provide a sufficient constraint such that the retail markets in the Hull Area will tend towards effective competition.

Sufficiency of competition law

We found in the context of both retail analogue exchange lines in Hull and retail ISDN30 in Hull that competition law is now sufficient to address market failures and therefore the imposition of ex ante regulation is no longer appropriate. We note that the market for ISDN2 is slightly different, but that much of the reasoning for removing ex ante regulation in the markets discussed above is also applicable to ISDN2. In particular we consider that:

- any competition concerns would become apparent in the absence of regulation due to prices in the rest of the UK providing a relevant (first order) benchmark for competitive retail rates;

- retail competitors would be able to indicate the existence of targeted KCOM discounts which would assist in identifying conduct that might constitute exclusionary behaviour; and

- despite the absence of any pricing regulation in this market, we have not identified any competition concerns at the present time, nor have we received any complaints or disputes which met our guidelines’ requirements sufficient to trigger an enquiry, in relation to KCOM’s commercial practices at the retail level. We also note that no competition concerns have come to our attention as a result of the removal of regulation in other retail markets in the Hull Area.

6.63 While the current ex ante regulation in this market (no undue discrimination and price publication) does not seem to have been effective in promoting entry, prices have remained constant in nominal terms since the last review in 2009 (a decline in real terms). In 2009, we found KCOM’s pricing of retail ISDN was broadly similar to that of BT’s. However, unlike BT, KCOM has not increased its retail tariffs since the 2009 Retail Narrowband Statement. This suggests that, even in the absence of significant direct competitors, KCOM is choosing to price at a similar or slightly lower level to BT. This supports our view that ex ante regulation is unnecessary.

6.64 Taking account of the above, we have concluded that competition law would now be sufficient to address market failures in the retail supply of ISDN exchange line services in the Hull Area.

Conclusions

6.65 In light of the analysis above and taking stakeholder responses into account, we have concluded that competition law is sufficient on its own to address market failures in the retail supply of ISDN exchange line services in the Hull Area. Accordingly ex ante regulation is no longer appropriate as all the requirements of the three criteria test are not satisfied. This conclusion is consistent with the views of the FCS and KCOM provided in response to the July 2013 FAMR Consultation (see paragraph 6.54).

6.66 For the avoidance of doubt, this conclusion means that the existing remedies imposed on KCOM in the retail market for ISDN in the Hull Area would be removed, namely:

- no undue discrimination; and
- price publication.

6.67 In relation to the voluntary undertakings proposed by KCOM in the 2010 Bundling Statement, we consider the same comments set out above regarding the retail fixed narrowband analogue access market should apply in relation to the retail ISDN2 market (paragraphs 6.36 to 6.37).

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269 As also suggested by [X] comments in its response to the July 2013 FAMR Consultation, made in relation to the supply of retail fixed narrowband analogue access services in the Hull Area but also applicable in relation to retail ISDN2 (see paragraph 6.9).

270 As noted in paragraph 6.54 above, [X] response to the July 2013 FAMR Consultation questioned the efficacy of the existing remedies given KCOM’s continuing “dominance”. However, given our view on KCOM’s pricing, and our conclusion on the sufficiency of competition law more generally, we do not consider the efficacy of ex ante regulation and consider that [X] submissions do not alter our conclusion that ex ante regulation is no longer appropriate.
Section 7

Market definition and SMP analysis:
Wholesale Local Access

Introduction

7.1 In this section we set out our assessment of market definition and market power in relation to the provision of WLA. The reasoning for carrying out a market definition and market power assessment, including our general approach to doing so, is set out in Annex 3. In approaching our assessment of market definition for the WLA market, we have taken utmost account of the guidance on market definition in the EC SMP Guidelines.

7.2 WLA refers to the fixed connection from the local exchange or access node to the end-user, corresponding to market 4 in the Relevant Markets Recommendation, to which we have had utmost account. WLA is an input into a variety of retail services that rely on a fixed local access connection:

- the provision of narrowband telephony (both voice services and dial up internet access);
- the provision of asymmetric broadband (at both standard (CGA) and superfast speeds);
- the provision of ISDN2 and ISDN30; and
- the provision of some symmetric broadband (leased line) services.

7.3 In the UK excluding the Hull Area there are two large fixed access networks operated by BT and Virgin respectively, while in the Hull Area there is one fixed access network operated by KCOM. Traditionally, BT has provided WLA using a copper connection between the customer’s premises and a local exchange. However, BT has recently been upgrading its copper access network by introducing fibre connections between the local exchanges and the street cabinets to make an FTTC network (with copper still used between the street cabinet and the consumer’s premise). KCOM operates a similar network in the Hull Area.

7.4 Virgin’s access network architecture is slightly different. It provides a connection between a customer’s premises and a street cabinet using a Siamese cable containing a coaxial cable and a twisted copper pair – the coaxial cable is used to support TV and broadband while the twisted copper pair is used to support standard telephony. Virgin then uses fibre rings to connect the street cabinets to the ‘head-end’ hub site.

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271 Namely “Wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location”.
272 BT has deployed an FTTP network in a small number of areas.
7.5 In addition to these large fixed networks, mobile network operators provide access using wireless connections between customers' devices and the operators' networks. There are also small, niche fixed networks.

7.6 Assessing the extent of competition between different access networks (e.g. BT, Virgin, KCOM and the mobile networks) is at the heart of our market definition exercise and SMP assessment.

7.7 This section is structured as follows:

- we summarise the position in the previous market review;
- we define the relevant markets; and
- we set out our assessment of market power.

7.8 For the latter two topics, we set out a summary of the proposals in the July 2013 FAMR Consultation, responses received from stakeholders, and our final analysis in light of these responses.

7.9 In summary, we conclude that the scope of the relevant market is the provision of copper loop-based, cable-based and fibre-based wholesale local access at a fixed location. Mobile, fixed wireless and satellite access lie outside the relevant market. There are two distinct geographic markets: the UK excluding the Hull Area; and the Hull Area.

7.10 In our market power assessment we conclude that:

- BT has SMP in the supply of WLA in the UK excluding the Hull Area; and
- KCOM has SMP in the supply of WLA in the Hull Area.

**Position in the previous market review**

7.11 Demand for WLA is derived from demand in downstream retail and wholesale markets for those services that require WLA as an input. In the 2010 WLA Statement we referred to our position in other reviews in relation to WFAEL, ISDN2, ISDN30, asymmetric broadband access and retail leased lines. Our views on the relevant market for the provision of WLA reflected the position in these downstream markets. For the WLA market we concluded that:

- copper loop-, cable- and optical fibre-based wholesale local access at a fixed location were in the same market;
- mobile, fixed wireless and satellite access did not lie in the relevant market;
- connections for business and residential users were in the same market; and

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273 For brevity we generally refer to ‘WLA’ in the text below.
• there were two separate geographic markets: the UK excluding the Hull Area, and the Hull Area.

7.12 In the 2010 WLA Statement we concluded that BT had SMP in the UK excluding the Hull Area based on its high and stable market share, the presence of significant barriers to entry and the absence of countervailing buyer power. We also concluded that KCOM, which enjoyed a 100% market share in the Hull Area, had SMP in the Hull Area.275

7.13 We revisited our analysis of BT’s position in the 2012 LLU WLR Charge Control Statement. We concluded that there had been no material change in the WLA market since Ofcom’s previous market power determination in the 2010 WLA Statement.276

Market definition

Provisional conclusion on the relevant market as set out in the July 2013 FAMR Consultation

7.14 In the July 2013 FAMR Consultation, our provisional conclusion was that the relevant product is the supply of copper loop-, cable- and fibre-based wholesale local access at a fixed location. Mobile access, access based on satellite technology and fixed wireless access all lie outside the relevant market. We also provisionally concluded that there are two geographically distinct relevant markets:

• the supply of copper loop-, cable- and fibre-based wholesale local access at a fixed location in the UK excluding the Hull Area; and

• the supply of copper loop-, cable- and fibre-based wholesale local access at a fixed location in the Hull Area.

Stakeholder responses to the July 2013 FAMR Consultation

7.16 We first set out general comments from respondents about the market definition analysis, before summarising responses on the more detailed product and geographic market definition analyses separately. BT277, the FCS278, Verizon279 and Virgin280 agreed with the proposed WLA market definition. Verizon considered that there had been little change in this market since

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275 Ibid.
the last review, and argued that there would continue to be little change during the period covered by this review.

7.18 BT stated that it did not see a strong case to fundamentally redefine existing WLA market definitions at this point, even in light of developments in superfast broadband. However, it identified significant changes in the market since the last review which it argued would need to be fully reconsidered by Ofcom in our next review (covering the period after 2017). These changes included significant technological advances,281 shifting end-user demands,282 and the blurring of boundaries between different products and their regulatory remedies (which BT argued was evidenced by Ofcom’s decision to combine WLA, WLR and ISDN reviews into a single FAMR process).283

7.19 BT also commented that Ofcom needed to fully consider the regulatory implications of the growing trend of competition based on triple play bundles (voice, broadband and content) in this current market review, arguing that all products contained in a bundle should be subject to a consistent regulatory approach to ensure a level playing field.284

7.20 TalkTalk stated that it agreed with large parts of Ofcom’s analysis (e.g. the exclusion of mobile internet access from the relevant market). In the limited places where TalkTalk differed, it considered that amending the analysis would nonetheless make no material difference to the analytical outcomes (including remedies) and so considered there to be no need to draw a firm conclusion in these regards.285

Product market definition

7.21 Virgin generally agreed with the approach to market definition and considered that the approach taken in previous reviews and followed here provided valuable and necessary continuity and consistency. It also broadly agreed with Ofcom’s criticisms in relation to the suitability of a critical loss analysis, considering there to be insufficient data to undertake a robust analysis.286

7.22 Virgin287 and BT288 both agreed that there was a single product market not differentiated by broadband speed, arguing that superfast broadband was constrained by current generation services. BT also stated that it was too early to

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281 Such as the increased use of MPF, the development of 4G services and investment in NGA infrastructure.
282 For example, BT argued that 4G services could increase the number of mobile-only households, which would affect the competitive position of mobile with regard to WLA.
consider the possibility that there might be separate retail or wholesale superfast broadband markets. Virgin also considered that, given our focal product, whether WLA was used to provide specific downstream services (e.g. standard broadband or superfast broadband) lay outside of this market analysis.

7.23 While TalkTalk agreed with Ofcom’s proposed SMP findings, it disagreed with some aspects of Ofcom’s choice of focal products, and also considered that there was insufficient evidence to conclude definitively that cable was part of the WLA product market. TalkTalk argued that it would be more appropriate to leave open the question of whether cable-based wholesale local access was in the relevant wholesale product market, and stated that this would enable Ofcom to revisit the issue in the next review given the rapidly changing dynamics of the WLA markets.  

7.24 TalkTalk also suggested that there may be separate markets for standard broadband and superfast broadband services at a fixed location within the period of this review, but stated that it did not consider that this issue was material in the context of the current review given Ofcom’s proposed conclusions (including in particular the proposed ex ante margin squeeze regulation of VULA).

Geographic market definition

7.25 The FCS, TalkTalk and Verizon all agreed with the geographic market definition conclusions, with TalkTalk also explicitly agreeing with the analytical approach. 

7.26 BT argued that the presence and competiveness of Virgin in major areas of the UK was an important factor to consider in this market review, including the potential existence of sub-national geographic markets where Virgin was present (and hence significantly altered local competitive conditions). Also argued that Ofcom erred in not considering different geographic areas, as, while in the round BT may have SMP nationally and Virgin did not, it was not the case in every geographic area. argued there was sufficient risk that these differences would have a material impact in this review period, noting that we defined different markets in the 2010 WBA Statement to reflect such sub-national differences.

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295 [x]
7.27 Conversely, Virgin disagreed with the potential for sub-national geographic markets based on its network footprint. Instead, it agreed that national pricing policies were relevant, and supported the rationale set out in the July 2013 FAMR Consultation. It noted that national pricing was adopted by most of BT’s competitors, save for situations where pricing differed as a result of differences in input characteristics (e.g. unbundled operators offering on-net and off-net pricing). It also noted that there were risks of inappropriate SMP findings and unnecessary remedies in defining sub-national markets on the basis of incomplete or inconclusive evidence, risking harm to consumers and other CPs by virtue of costly and unwarranted regulation. For this reason, Virgin argued that the evidential threshold should be set at a high level when considering sub-national markets. 296

7.28 Some respondents also commented on the new build analysis. BT argued that Ofcom should review its policy for new build sites (and the impact on end-user choice) in the future. It argued that, in such sites where infrastructure was provided by a CP other than Openreach, one could justify defining a sub-national market with a subsequent finding of SMP for the CP in question and/or removal of regulatory obligations applying to BT. 297 Also raised concerns with new build areas, arguing that where the provider was neither KCOM nor BT, it had complete dominance in the provision of services to that geographic area but was unencumbered by any SMP conditions. 298 referred to other examples where, it argued, CPs have undermined Ofcom’s policy position in this respect, e.g. in the market for directory enquiry services, non-geographic call origination (notably Ofcom’s policy preferences on 0845/0870) and on Net Neutrality.

Our analysis and conclusions

7.29 We now set out our views on market definition in light of stakeholder responses to the July 2013 FAMR Consultation and respond to those views where appropriate. An explanation of our general approach to market definition is set out in Annex 3. This section is structured as follows:

- we set out some preliminary observations on market definition;
- we discuss the focal product that we have adopted;
- we explain the implications of the modified Greenfield approach;
- we consider product market definition;
- we consider geographic market definition; and

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298 referred to other examples where, it argued, CPs have undermined Ofcom’s policy position in this respect, e.g. in the market for directory enquiry services, non-geographic call origination (notably Ofcom’s policy preferences on 0845/0870) and on Net Neutrality.
• we summarise our conclusions.

Preliminary observations on market definition

7.30 The purpose of market definition is to structure and inform our assessment of whether SMP exists. In previous reviews we have found that both BT and KCOM possess SMP.

7.31 In defining the relevant product market, we consider demand-side and supply-side substitutes. The ‘hypothetical monopolist test’ (‘the HMT’) can be a useful analytical tool to help identify these. However, given the complex real life market mechanisms which can be present, market definition (or indeed the HMT) is not a mechanical process and so in using this test it is important to be mindful of the ultimate objective of the market review process (i.e. identifying SMP and identifying products for which regulatory intervention is appropriate), rather than seeing market definition as an end in its own right.300 For example, WLA is a product that is likely to exist solely as a result of regulatory intervention – absent such intervention it is doubtful whether large network CPs would provide WLA to third party CPs.

Focal product

7.32 The focal product forms the starting point for the market definition exercise. For the purposes of this market review, we consider that the focal product should be the provision of wholesale local access at a fixed location by a network that uses a mixture of copper loops and fibre. We are reviewing the markets that we previously defined in 2010. BT and KCOM were found to have SMP in these markets and our choice of focal product reflects the service provided by those firms (both operate networks using copper loops supplemented by fibre (such as FTTC and FTTP)).

7.33 Only TalkTalk explicitly disagreed with our choice of focal product and instead considered that we should define the relevant markets associated with (i) the provision of superfast broadband at a fixed location over loop-based infrastructure; and (ii) the provision of standard broadband over loop-based infrastructure.301 We do not agree. The choice of focal product depends on the purpose for which the analysis

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300 The EC guidelines on market analysis state that “Market definition is not a mechanical or abstract process but requires an analysis of any available evidence of past market behaviour and an overall understanding of the mechanics of a given sector”. Paragraph 35, Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services (2002/C 165/03), July 2002, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2002:165:0006:0031:EN:PDF. Additionally, we note that the Office of Fair Trading (‘OFT’) stated that “… it should be emphasised that defining a market in strict accordance with the [hypothetical monopolist] test’s assumptions is rarely possible. Even if the test … could be conducted precisely, the relevant market is in practice no more than an appropriate frame of reference for analysis of the competitive effects. Nevertheless, the conceptual framework of the test is important as it provides a structure within which evidence on market definition can be gathered and analysed” (paragraph 2.6). Further “The OFT will not follow mechanically every step described [in its guidelines] in every case. Instead, the OFT will look at evidence that is reasonably attainable and relevant to the case in question” (paragraph 1.2; footnote omitted). OFT, Market definition, December 2004, OFT403, www.oft.gov.uk/shared_oft/business_leaflets/ca98_guidelines/of403.pdf. 301 Paragraph 1.14, Annex 1, TalkTalk response to the July 2013 FAMR Consultation – annexes, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/TalkTalk_Annexes.pdf.
is being carried out. In this review we are assessing market 4 in the Relevant Markets Recommendation, namely the supply of “Wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location”. The two markets that TalkTalk considers we should define lie downstream from our focal product (as well as from market 4 as defined by the EC) and relate to specific services that use WLA as an input (namely broadband – TalkTalk’s proposed focal products exclude the provision of access for other telephony services).

Therefore we continue to consider that the provision of wholesale local access at a fixed location by a network that uses a mixture of copper loops and fibre is the appropriate starting point for this WLA market definition. It is worth noting the following features of this focal product:

- the key characteristic is the provision of access, rather than the type of service that access is being provided for. The different services that can be provided using WLA (such as narrowband, broadband, ISDN etc) lie downstream;
- similarly, our focal product does not distinguish between wholesale local access that is used to provide business services and residential services. At the access level, the connections used to supply business and residential end-users are essentially identical, even if the downstream services (including supplementary features such as quality of service guarantees) may differ;
- our focal product does not include the provision of cable-based wholesale local access. Rather we consider whether cable networks, primarily Virgin, lie within the relevant market as part of our assessment of indirect constraints; and
- similarly, our focal product does not include the provision of access using mobile networks. Again we assess whether mobile networks lie within the relevant market as part of our assessment of indirect constraints.

Implications of the modified Greenfield approach

We have applied the modified Greenfield approach when carrying out the market definition exercise. This means that existing SMP remedies that apply to the WLA market and to downstream markets are disregarded. The market definition exercise is thus conducted in relation to a hypothetical scenario in which many of the SMP remedies that have shaped fixed telecoms competition at the retail level are absent, including LLU, VULA, Physical Infrastructure Access (PIA), Sub-Loop unbundling (SLU), WLR and WBA. In this scenario, there is likely to be little or no use of BT’s access infrastructure by third party CPs and an explicit WLA product offered to third

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302 If we were conducting the market power assessment for a different purpose (such as a competition law case), it may be appropriate to take a different focal product to the one adopted in this review. For example, the OFT describes the focal product as “the product under investigation”. This highlights that where the investigation is different, the focal product is likely to differ (paragraph 2.9, OFT, Market definition, December 2004, OFT403, www.oft.gov.uk/shared_oft/business_leaflets/ca98_guidelines/oft403.pdf).

party CPs by BT is unlikely to exist. For this reason, we consider that, in the modified Greenfield scenario, retail competition for fixed services will be between different vertically-integrated networks (i.e. limited to BT and Virgin in the UK excluding the Hull Area, and KCOM in the Hull Area). We also consider the potential additional constraint on fixed services from mobile and other forms of access within this scenario below (see paragraphs 7.56 onwards).

**Relevant product market**

7.36 As set out in Annex 3 (and consistent with the Relevant Markets Recommendation), in considering the wholesale market definition it is important to consider the relevant retail services (and retail substitution). This is because the demand for the upstream wholesale service is a derived demand – i.e. the level of the demand for the upstream input depends on the demand for the retail service. Being a derived demand also means that the range of available substitutes at the retail level will inform the likely range of substitutes for the upstream wholesale service.

7.37 The importance of the retail analysis is particularly apparent in relation to WLA because, as explained above, under the modified Greenfield approach we consider a scenario where CPs such as BT, Virgin and KCOM are unlikely to grant third party access to their networks. Accordingly, we believe that direct constraints on the provision of the focal product are unlikely to be relevant. Similarly, the very high entry barriers to establishing a substantial new fixed network mean that supply-side substitution is not plausible. We therefore consider that the key issue for determining the boundaries of the relevant wholesale product market is the extent of indirect constraints due to substitution at the retail level. An increase in the price of wholesale local access at a fixed location by a network that uses a mixture of copper loops and fibre is likely to increase the downstream price of the services supplied by that network. As a result, final consumers may instead switch to services supplied by other networks (e.g. cable-based or mobile), reducing the demand for the wholesale input being considered.

7.38 In considering retail substitutability, we note that WLA is an input into a range of different retail services. In this regard, we note BT’s statement that we need to consider the regulatory implications of the growing retail trend of triple-play bundles in assessing retail substitutability (see above). However, we do not consider that the specific individual retail services (or indeed different retail bundling of these services) fundamentally affects our analysis for the purposes of this WLA market definition. This is because in this document we are seeking to define the WLA market, in line with the Relevant Markets Recommendation (as discussed in paragraph 7.2). As such, we are concerned with downstream markets to the extent they inform the WLA market definition (and, specifically, our analysis of indirect constraints). An increase in the price of wholesale local access will likely increase the price of any retail service or bundle which uses WLA (triple-play or otherwise). Therefore the specific retail service provided using WLA (and substitution between different retail services which use the same WLA input) is not particularly informative for the purposes of defining the wholesale market. Rather, our focus for defining the WLA market is

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304 This is consistent with the commercial strategy adopted by Virgin of not granting third party access to its network.
305 In this scenario, if we were to analyse the retail level, we would likely find that BT holds a position of SMP, as discussed in Section 2.
306 We discuss entry barriers as part of our assessment of market power below (see paragraph 7.87).
substitutability between retail services delivered by our focal product and retail services delivered by alternative wholesale networks more generally.

7.39 With this in mind, we have identified the following alternative networks which potentially offer substitutable retail services for consumers: cable-based wholesale local access, mobile access, and other forms of access. We now assess each in turn by considering the extent of demand side substitutability by retail consumers and determining whether retail switching is likely to exert a sufficient indirect competitive constraint on our focal product such that it should be included in the wholesale market definition. Consistent with the Relevant Markets Recommendation, we have considered the relevant retail markets from a forward looking perspective in the absence of regulation, taking into account demand-side substitutability (for the reasons set out in paragraph 7.37, we consider supply-side substitutability to be of limited relevance here).

7.40 Our analysis draws upon the assessments of substitutability that we have conducted for the supply of WFAEL in this Statement (see Section 3), the 2014 WBA Statement and the 2013 Narrowband Statement. We therefore consider that it appropriately reflects changes in the market since the last review (as argued by BT).\textsuperscript{307} We recognise, however, that the downstream market definition exercises in Section 3 and these documents are conducted assuming a somewhat different framework. First, the relevant scenario (given the modified Greenfield approach) may be different (e.g. the analysis in the 2014 WBA Statement assumes that LLU is in place). Second, a rise in the price of wholesale local access by a particular network will likely increase the price of all downstream products supplied by that network (i.e. there is a rise in the price of a range of narrowband and broadband services, rather than just one type of service). Nonetheless, we consider that the broad conclusions of those other market definitions are relevant.

**Cable-based wholesale local access**

*Indirect constraint from cable-based wholesale local access*

7.41 In assessing the retail market, the previous WLA market review found that cable- and loop-based broadband access services had become more similar in terms of product specification and pricing, and that marketing materials from both types of operators supported the view that they were substitutes. As such, our view was that cable was in practice a strong competitor at the retail level.\textsuperscript{308}

7.42 We continue to believe that the retail products available over BT’s network and over Virgin’s network have similar characteristics and intended use, and that they also continue to be priced at similar levels for comparable services. Both networks provide fixed voice and broadband services in the UK which can be provided together in a

\textsuperscript{307} BT also highlighted a number of factors that, in its view, should be taken into account in the next market review (i.e. covering the period after 2016/17). Clearly we are not currently in a position to comment on what market changes after 2016/17 (including those identified by BT) will have on future market reviews – rather, we will consider these factors, as appropriate, then. See Paragraph 63, *BT response to July 2013 FAMR Consultation*, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.

7.43 For these reasons, we consider that cable and loop-based services compete at the retail level, and that consumers are likely to regard them as substitutable services. We are not aware of any reasons why we should expect the extent of retail substitution to significantly reduce during this review period (particularly since both Virgin and BT are investing in superfast broadband in the UK). We consider it likely that Virgin and BT will continue to compete in the provision of retail services for this review period (we note that this is consistent with our findings in other wholesale market reviews considering the same retail markets311). No respondents to the July 2013 FAMR Consultation disagreed with this view or explicitly referred to specific market developments which would reduce retail substitution.

7.44 Given that the retail products available over BT’s network compete with those provided over Virgin’s network, we consider that this indicates that cable-based wholesale local access exerts an indirect constraint on the provision of wholesale local access by a network that uses a mixture of copper loops and fibre. This is because an increase in the wholesale price of copper- and fibre-based local access that increased retail prices would likely trigger retail switching towards cable-based services. This view is consistent with past market reviews, where we have consistently concluded that cable-based wholesale local access lies within the WLA market on the basis of indirect constraints.312

7.45 A number of stakeholder responses referred to the extent of substitutability between standard and superfast broadband in relation to the analysis of cable as an indirect constraint.313 As explained in paragraph 7.37 above, an increase in the price of

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309 For example, comparisons of similar services (and their respective prices) from BT and Virgin Media can be found in Figures 5.62 and 5.65 of Ofcom, Communications Market Report 2013, 1 August 2013, [http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr13/2013_UK_CMMPdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr13/2013_UK_CMMPdf).

310 Rather, distinctions between offerings are typically based on a range of characteristics (such as speed, additional services provided, availability etc). See for example [http://www.broadbandchoices.co.uk/](http://www.broadbandchoices.co.uk/) and [http://www.simplifydigital.co.uk/](http://www.simplifydigital.co.uk/).


wholesale local access by a particular network increases the price of all downstream services that use this input (i.e. including both standard and superfast broadband). Therefore the key question for the purposes of market definition is the extent of substitutability between services provided by different networks, rather than between different services supplied by the same network. In any event, superfast broadband is available over both BT’s and Virgin’s network. Moreover, as set out in the product market definition section in the 2014 WBA Statement, we consider that it is appropriate to define a single retail market for all broadband speeds at present. Therefore we do not consider that this affects our view of indirect constraints from cable-based local access.

7.46 TalkTalk argued that it would be more appropriate to leave open the question of whether cable-based wholesale local access is in the relevant wholesale product market, and stated that this would enable Ofcom to revisit the issue in the next review given the rapidly changing dynamics of the WLA market. In this regard:

- TalkTalk considered that there was a lack of relevant evidence on the extent to which cable-based local access imposes an indirect constraint on copper and fibre-based access, or to determine whether there have been changes in competitive conditions from previous market reviews. It argued that we had placed too much reliance on a characteristics based assessment of product market definition, and stated that this is a flawed approach that can lead to erroneous conclusions;

- TalkTalk reiterated its view that it would be preferable to conduct a quantified SSNIP test and critical loss analysis, and argued that the conclusions of the critical loss analysis set out in its response to the 2012 FAMR Call for Inputs indicate that cable-based access is unlikely to impose a strong indirect constraint on copper and fibre-based access. It acknowledged that the data to undertake such a critical loss analysis is “far from ideal”, but stated that this does not affect the desirability of undertaking such an analysis.

7.47 Having considered TalkTalk’s arguments, we do not consider that it is appropriate in the context of the overall legal framework to leave open the question of whether cable is in the product market (as suggested by TalkTalk). We therefore consider that

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314 Section 12 describes the expected availability of superfast broadband over BT’s network during the period covered by this review and describes Virgin’s programme of upgrading its customers to offer superfast speeds.
318 ‘Small but Significant Non-transitory Increase in Price’.
319 Paragraph 1.2-1.3, and 1.17-1.20, Annex 1, TalkTalk response to the July 2013 FAMR Consultation – annexes, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/TalkTalk_Annexes.pdf. TalkTalk also noted a potential asymmetry whereby it is plausible that loop-based internet access may be a viable competitive constraint on cable-based internet access, driven by the different geographic spread of the two networks which creates a natural asymmetry of competitive constraints.
it is necessary to reach a view as to whether the wholesale local access product market we identify in this review includes access based on copper, fibre and cable. This is in line with our approach in the July 2013 FAMR Consultation document, and consistent with previous WLA market reviews. Therefore we have considered our position in light of TalkTalk’s more detailed comments.

7.48 TalkTalk does not appear to dispute the fact that cable-based services compete with copper- and fibre-based services at the retail level (i.e. that Virgin and BT currently compete for retail consumers). Its concern therefore appears to be whether this retail substitutability provides a sufficient constraint on wholesale prices such that it should be included in the wholesale market. TalkTalk has put forward its own view of the appropriate framework to consider this, including the use of a quantified SSNIP test (critical loss analysis). In this regard, we make the following observations.

7.49 First, we consider that our approach reflects the Relevant Markets Recommendation by considering the demand side substitutability of cable-based local access in the retail market in the UK, reflecting the characteristics, intended uses and pricing of the different retail offerings, and likely responsiveness (and attitudes) of consumers.320 We then use this to inform our wholesale market definition.

7.50 Secondly, our approach also reflects the fact that market definition is a means to an end whose purpose in this market review is to help inform the assessment of whether BT (and KCOM) has SMP. We take utmost account in this regard of the Relevant Markets Recommendation, noting Recital 2 which says:

“This purpose of this Recommendation is to identify those product and service markets in which ex ante regulation may be warranted in accordance with Article 15(1) of Directive 2002/21/EC. The objective of any ex ante regulatory intervention is ultimately to produce benefits for end-users by making retail markets competitive on a sustainable basis”.

7.51 We likewise take account that this purpose of defining markets is reflected in the EC SMP Guidelines, paragraphs 34 and 35 of which say:

“In assessing whether an undertaking has SMP, that is whether it ‘enjoys a position of economic strength affording it the power to behave to an appreciable extent independently of its competitors, customers and ultimately consumers’, the definition of the relevant market is of fundamental importance since effective competition can only be assessed by reference to the market thus defined…”, and

“Market definition is not a mechanical or abstract process but requires an analysis of any available evidence of past market behaviour and an overall understanding of the mechanics of a given sector…”

7.52 Thirdly, we note TalkTalk’s acknowledgment that the data to undertake the critical loss analysis it advocates is “far from ideal”. This is consistent with the view we set

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320 We note in this regard Recital 4 of the Relevant Markets Recommendation, which says, “The starting point for the identification of markets in this Recommendation is the definition of retail markets from a forward looking perspective, taking into account demand-side and supply-side substitutability.”
out in the July 2013 FAMR Consultation about the insufficiency of suitable data\textsuperscript{321} to reliably estimate the parameters required.\textsuperscript{322}

7.53 We therefore remain of the view that it is not necessary or appropriate to carry out a quantitative critical loss analysis for the purposes of defining the WLA market under the telecoms framework (and in particular to assess the indirect constraints from cable-based wholesale local access) in this review. We also consider that the inclusion of cable in the product market provides an appropriately conservative basis for the assessment of whether BT has SMP, which ensures that the strength of competitive pressure from indirect constraints can be fully considered and reflected in our assessment of SMP without erroneously affecting our analysis of SMP and identification of appropriate remedies.\textsuperscript{323} This approach avoids the risk of an incorrect finding that BT has SMP that might (in principle) arise if we excluded cable from the market and thereby failed to fully reflect the importance of indirect constraints in the competition analysis.\textsuperscript{324}

7.54 We note in this context that we consider that our finding that BT has SMP, and therefore our remedies, in this review period would not be affected if the product market were defined more narrowly to exclude cable-based access.\textsuperscript{325} We also note that TalkTalk agreed with our SMP finding, and therefore does not appear to consider that our market definition has resulted in an erroneous conclusion in relation to SMP, notwithstanding its reservations about the strength of evidence for the inclusion of cable in the wholesale market.

\textsuperscript{321} This was discussed in paragraph 7.48-9 of the July 2013 FAMR Consultation (and was also raised by Virgin in its consultation response). In particular, we identified the absence of suitable elasticity estimates as a key obstacle given they are empirically difficult to determine, particularly under a modified Greenfield scenario given its hypothetical nature. We noted that the elasticity estimates used by TalkTalk rely on a survey from 2007, which TalkTalk acknowledged was dated. A separate submission by AlixPartners for TalkTalk criticised the weight we previously placed on this 2007 survey and we addressed this argument in paragraphs 7.51-7.52 of the July 2013 FAMR Consultation. This is also consistent with our approach in the 2013 Narrowband Market Statement, where we acknowledged the difficulties of reliably conducting a critical loss analysis (see, for example, paragraph 5.46 of Ofcom, \textit{Review of the fixed narrowband services markets - statement}, 26 September 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/nmr-2013/statement/Final_Statement.pdf).

\textsuperscript{322} Although this view does not preclude us from carrying out a quantitative critical loss analysis where we consider it reasonable and appropriate to do so and where sufficient data is available. For example, we previously carried out critical loss analysis in the 2007 WBA Consultation.

\textsuperscript{323} Note, although we conservatively include cable-based local access in the relevant product market (for the reasons set out above), we do not consider the WLA market to be any wider than this (already conservative) approach due to: a) the lack of close wholesale substitutes to copper-, fibre- and cable-based local access (discussed above); and b) the lack of close retail substitutes to copper-, fibre- and cable-based retail services (as per the discussion excluding mobile and other forms of access below). We note that our assessment of direct and indirect constraints is consistent with the WLA market being no wider than the retail market it is supplying.

\textsuperscript{324} Our approach to indirect constraints is consistent with that adopted in the 2007 WBA Statement, in which we considered that it is generally preferable to include sources of indirect constraints at the market definition stage (and therefore market share calculations) as, given the importance given to market share in SMP analysis, there would be a danger of overstating market power if sources of indirect constraints were not included. For further explanation, see paragraphs 3.171-3.172 of Ofcom, \textit{Review of the wholesale broadband access markets 2006/7 – consultation}, 15 November 2007, http://stakeholders.ofcom.org.uk/binaries/consultations/wbamr07/summary/wbamr07.pdf.

\textsuperscript{325} This is because we consider that BT (as the monopoly provider) would still have SMP if the WLA market were defined more narrowly to exclude cable, since excluding cable-based local access would simply imply that competitive constraints on BT are even weaker than is the case under the wider market definition that we have adopted. In view of this, we consider that the remedies imposed for this review period would likely be unaffected even if cable was not included in the product market.
7.55 We also note that our market definition in this market review does not prevent us from reviewing whether cable-based local access is in the market in the next market review (as TalkTalk appears to imply), as each market review is undertaken in the light of the circumstances at the time. We take account in this regard of Recital 2 of the Relevant Markets Recommendation, which says:

“The definition of relevant markets can and does change over time as the characteristics of products and services evolve and the possibilities for demand and supply substitution change”.

Mobile access

7.56 We now consider whether mobile access should also be included in the relevant wholesale market.

7.57 We consider that mobile access is unlikely to act as an effective retail substitute for fixed local access for the period covered by this review, such that it provides a sufficient indirect constraint on wholesale local access, for the following reasons:

- for mobile access to act as an effective competitive constraint, consumers would need to be willing to cease buying fixed products (which use fixed WLA as an input) and instead rely on mobile products;

- for most consumers, mobile telephony appears to be complementary to fixed telephony. As discussed in Section 3 (see paragraph 3.29), the vast majority of households have access to both mobile and fixed telephony, with just 11% mobile-only in 2012/13. The proportion of mobile-only households has declined slightly in recent years and it seems reasonable to assume that this will continue to be the case during the period covered by this market review (as discussed in Annex 24). We adopted a similar view in the 2013 Narrowband Statement;

- as set out in Section 3, we consider that the potential for switching to mobile access at the retail level across both the residential and business segments is likely to be limited throughout the period covered by this review;

- in the 2013 Narrowband Statement we stated that the competitive constraint exercised on fixed narrowband calls at the retail level from calls originated on a mobile network does not appear to be sufficiently significant at this stage to justify widening our product market definition. We adopt and rely on the analysis in the 2013 Narrowband Statement for this aspect of our conclusion;

- in terms of data services, we recognise that the deployment of 4G mobile networks and the recent release of substantial amounts of spectrum in the 800 MHz and 2.6 GHz bands will increase the speed and attractiveness of mobile data services (as argued by BT). However, in the section on product market

326 Mobile-only households are discussed further in Annex 24.
328 Paragraph 5.90, Ibid.
definition in the 2014 WBA Statement\textsuperscript{329} we conclude that mobile broadband access and access to the internet via a smartphone do not currently constrain fixed broadband access. We adopt and rely on the analysis in the 2014 WBA Statement for this aspect of our conclusion. In particular, 4G mobile broadband is still in the early stage of development with uncertainties over, for example, its roll-out, take-up and speed. Within the timescale of the current market review period, we think it more appropriate to continue to consider that mobile broadband access is not in the same relevant market as fixed broadband access. Although 4G mobile broadband access is likely to increase significantly, we consider that most consumers will continue to require fixed broadband and will regard mobile broadband as a complementary service in this review period, in line with uptake of mobile broadband services to date. This is also consistent with our findings in relation to the WFAEL market\textsuperscript{330}; and

- ISDN2 and ISDN30 are downstream services that use fixed local access as an input.\textsuperscript{331} There are no direct mobile equivalents for these services.

7.58 Therefore given these limitations to retail substitutability between fixed local access and mobile access, we consider that mobile access will not provide a sufficient indirect constraint and so do not consider that the relevant wholesale market should be expanded to include mobile access for the period covered by this review. No respondents disagreed with this view.

Other forms of access

7.59 We have also considered the position of other forms of access network, namely satellite, fixed wireless access, and small-scale fibre-based NGA deployments alongside BT’s network (an example of the latter is Hyperoptic, which supplies fibre access to premises such as apartment blocks).\textsuperscript{332}

7.60 The downstream products supplied using these alternative access networks represent niche products. Our view on these other forms of access is set out below:

- in the section on product market definition in the 2014 WBA Statement, we conclude that satellite broadband lies outside the market for broadband access.\textsuperscript{333} We adopt and rely on the analysis in the 2014 WBA Statement for this aspect of our conclusion, and note that no respondents to the July 2013 FAMR Consultation argued against this. We thus conclude that access based on satellite technology continues to lie outside the relevant market;

\textsuperscript{329} See Section 3, Ofcom, \textit{Review of the wholesale broadband access markets – statement}, 20 May 2014, \url{http://stakeholders.ofcom.org.uk/consultations/review-wba-markets/draftstatement/}.

\textsuperscript{330} As set out in Section 3, we consider that mobile access is not a sufficiently strong substitute to fixed narrowband access to be included in the WFAEL market and note that, although uptake of mobile broadband has been increasing and a move to 4G will increase the speeds available, it is unlikely to significantly affect the demand for broadband via fixed line access within this review period.

\textsuperscript{331} We discuss ISDN30 and ISDN2 market definition in Sections 4 and 5, respectively.

\textsuperscript{332} Consumers in premises covered by such networks can choose between services provided using BT’s existing network and services provided using Hyperoptic’s network (for example). This is distinct from fibre deployments in new build premises where BT is not present. We discuss this issue in the context of geographic market definition below.

\textsuperscript{333} See Section 3, Ofcom, \textit{Review of the wholesale broadband access markets – statement}, 20 May 2014, \url{http://stakeholders.ofcom.org.uk/consultations/review-wba-markets/draftstatement/}. 
• similarly, in the section on product market definition in the 2014 WBA Statement we conclude that fixed wireless access lies outside the market for broadband access.\(^{334}\) We adopt and rely on the analysis in the 2014 WBA Statement for this aspect of our conclusion, and note that no respondents to the July 2013 FAMR Consultation argued against this. We thus conclude that fixed wireless continues to lie outside the relevant market; and

• in terms of small-scale fibre based NGA deployments alongside BT’s network, it seems plausible that these lie within the relevant market for the same reasons that cable-based access is included (i.e. because at the retail level, consumers can switch between services based on both networks in response to a retail price increase, and as such this switching is likely to act as an indirect constraint on wholesale prices).

7.61 We also note that, given their small scale, whether or not these alternative access networks are included in the market would not affect our conclusions on SMP.

Final conclusion on the relevant product market

7.62 In summary, we conclude that the scope of the relevant market is the provision of copper loop-based, cable-based and fibre-based wholesale local access at a fixed location. Mobile, fixed wireless and satellite access lie outside the relevant market.

7.63 We consider that this market definition is consistent with the existing Relevant Markets Recommendation, of which we have taken utmost account. We note that the EC is in the process of revising its Recommendation on relevant markets. We will take utmost account of any revised Recommendation in the next market review process.

Relevant geographic market

7.64 We now consider the relevant geographic market. There are three main issues to consider in relation to geographic market definition during the period covered by this review:

• the UK excluding the Hull Area and the Hull Area;

• new build areas where BT is not present; and

• areas covered by Virgin’s cable network.

The UK excluding the Hull Area and the Hull Area

7.65 KCOM and BT operate distinct local access networks covering the Hull Area and the rest of the UK respectively. Competitive conditions are unlikely to be homogenous between the Hull Area and the rest of the UK given that they are served by different CPs. In line with our longstanding practice we consider that the Hull Area and the rest of the UK lie in separate geographic markets. None of the respondents to the July 2013 FAMR Consultation suggested that we should cease to distinguish between these two areas.

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New build areas

7.66 In some new housing developments, CPs other than BT have deployed NGA networks while BT itself is not present. We understand that the number of consumers in such areas is small.\textsuperscript{335}

7.67 We recognise that there may be a case for identifying such areas as distinct geographic markets based on the same reasoning that leads to the Hull Area being identified as a distinct geographic market (as argued by both BT and \[\times\] in their respective responses to the July 2013 FAMR Consultation).\textsuperscript{336} This potentially leads to a number of additional geographic markets (e.g. for a particular housing development) for each of which we would need to assess whether the local network operator has SMP.

7.68 We set out our approach to new build fibre developments in the 2010 WLA Statement.\textsuperscript{337} We set out our expectations about the practices that CPs should adopt. In particular we stated that,

\begin{quote}
“Where the new build operator has not been found to have SMP, then we would expect the operator of the new build network to provide access to it on a fair, reasonable and non-discriminatory basis through fit-for-purpose wholesale products. However, should this prove ineffective in particular cases, we would be prepared to undertake the relevant market reviews, and to impose appropriate formal SMP obligations in the event of an SMP finding”.
\end{quote}

7.69 Although \[\times\] has argued that this approach is not effective, it has not presented evidence that this approach is having significant negative effects on consumers or competition (e.g. a new build operator failing to provide appropriate access upon request). Nor has it provided evidence that the risk of negative effects is likely to increase during this review period. We are also not aware of any such evidence. Therefore our current view is that the approach set out in the 2010 WLA Statement remains an appropriate and proportionate way of addressing the risks associated with new build fibre deployments. This approach targets regulation at problematic cases and thus avoids imposing an unnecessary regulatory burden on other new build CPs. It is also reasonable given the uncertainties about whether other CPs would be interested in buying access from small CPs serving a particular new build development.\textsuperscript{338} Accordingly, we do not reach the view that such areas represent

\textsuperscript{335} We previously commissioned a report which summarised the state of local access fibre deployments as of September 2010. However, this information is somewhat dated and appears to include deployments that are alongside BT’s network, rather than just in areas where BT is absent. Of those operators that provided information for this report, all but one had connected fewer than 1,000 premises (the exception was i3 Group, with 20,000 premises). Figure 4.31, Analysys Mason for Ofcom, UK local access fibre deployment study, 27 January 2011, http://stakeholders.ofcom.org.uk/binaries/telecoms/policy/local-fibre-access.pdf.

\textsuperscript{336} This contrasts with areas where BT has a local access network; such areas fall within our market definition.


\textsuperscript{338} CPs have previously identified the small size of the Hull Area (approximately 190,000 premises) as an obstacle to entering that market by purchasing access to KCOM’s network. This suggests that the barrier to purchasing access from a CP in a new build area would be considerably greater (far fewer premises are likely to
distinct geographic markets (and therefore they are considered as part of the UK excluding the Hull Area). Should this approach prove ineffective then we may need to revisit the question of market definition in relation to new build areas where problems emerge.

Areas covered by Virgin’s cable network

7.70 While BT has virtually 100% coverage of the UK, Virgin’s cable network has sub-national coverage (as at June 2013, approximately 48% of premises were in postcodes served by its cable network339). We have considered whether (outside the Hull Area) we should distinguish between areas based on whether or not they are covered by Virgin’s network (and define sub-national geographic markets on this basis) in previous WLA reviews. In each case, we took the view that it was appropriate to define the UK excluding the Hull Area as a single geographic market.340 We are not aware of any developments that mean that it is appropriate to adopt a different view on geographic market definition. Rather the reasoning we adopted in the 2010 WLA Statement would appear to continue to be applicable. In particular:

• we consider that we should not use the HMT to define geographic markets for WLA. This is because the test works by identifying whether customers would substitute (i.e. move) to other geographic areas (demand-side substitution) in the face of a price rise and also whether any firms supplying different products would begin to supply in the geographic area in question (supply-side substitution) as a result of a price increase. Since opportunities for demand and supply-side substitution are limited, this approach would lead to the definition of very narrow markets which are unlikely to be practical to analyse or be representative of competitive constraints that exist;

• rather, we consider that the geographic market should be defined on the basis of common pricing constraints. Accordingly we have considered whether, in the hypothetical scenario where ex ante regulation is absent, BT would find it profitable to adopt uniform national pricing or instead charge different prices depending on whether or not Virgin is present in a particular area;

• as set out above, in this scenario there is likely to be little or no use of BT’s network by third party CPs. Rather the focus of competition would be between BT and Virgin’s vertically integrated networks;

• considering BT’s likely conduct in this hypothetical scenario is inherently speculative. However, there are a number of reasons why BT might adopt a national pricing strategy. First, BT’s universal service obligation requires it to supply a basic voice service and functional internet access at a uniform price. Second, academic research has highlighted that national pricing by a firm that has

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339 Figure 1.2, Ofcom, Communications Market Report 2013, 1 August 2013, http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr13/2013_UK_CMR.pdf.

a monopoly position in one region of a country may soften competition in competitive areas. BT may prefer uniform pricing since it commits BT to price less aggressively than it otherwise would within areas where there is some competition, such as those where cable is present. This commitment can induce rivals to price less aggressively. Third, the potential impact on brand reputation may suggest that uniform pricing is attractive; and

- where BT has adopted local pricing it has been in response to relatively intense levels of competition, not the presence of a single competitor and never in response to cable infrastructure alone.

7.71 We note that BT and have argued in response to the July 2013 FAMR Consultation that we should consider further the potential existence of sub-national markets in relation to Virgin’s presence. However, only advanced any reasoning to support its position, namely consistency with the approach adopted in relation to WBA. There has been a longstanding difference in the outcome of geographic market definition in relation to WBA and WLA which is a consequence of factual differences between these products. We previously considered this in detail.

7.72 In brief, in terms of broadband services, BT maintained national pricing in face of competition from cable in the early years of broadband roll-out and it was only when faced with competition from multiple LLU operators that it moved away from nationally uniform pricing. While we cannot be definitive about what pricing would emerge in a WLA market in the modified Greenfield scenario, faced with competition only from Virgin as the cable access operator it is reasonable to assume that BT would maintain a policy of national pricing.

7.73 Thus, in our view, there are reasonable grounds to consider that common pricing constraints justify a finding of a single geographic market outside of the Hull Area.

Final conclusion on the relevant geographic market

7.74 In light of the above, we conclude that there are two distinct geographic markets: the UK excluding the Hull Area; and the Hull Area.

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341 For a detailed discussion on this point, see Chain-Store Competition: Customized vs. Uniform Pricing, Dobson P and Waterson M, Warwick Economic Research Paper No. 840. Referring to evidence gathered as part of the Competition Commission investigation into grocery retailing, the authors note that supermarkets adopt national pricing despite local variations in cost and competition. Available at: www2.warwick.ac.uk/fac/soc/economics/research/workingpapers/2008/twerp_840.pdf.

342 The analysis we set out in paragraph 3.78, Ofcom, Review of the wholesale local access market, 7 October 2010 http://stakeholders.ofcom.org.uk/binaries/consultations/wla/statement/WLA_statement.pdf, remains relevant in this regard.


346 We do however consider the competitive constraint posed by Virgin in light of its more limited geographic coverage further below as part of the market power assessment.
Final conclusion on market definition

7.75 In the light of the factors set out above, we conclude that the scope of the relevant market is the provision of copper loop-based, cable-based and fibre-based wholesale local access at a fixed location.\textsuperscript{347}

7.76 We also conclude that there are two distinct geographic markets: the UK excluding the Hull Area; and the Hull Area.

Assessment of market power

Provisional conclusion as set out in the July 2013 FAMR Consultation

7.77 Our provisional conclusion was that:

- BT will continue to have SMP in the WLA market outside of the Hull Area; and
- KCOM will continue to have SMP in the WLA market in the Hull Area.

Stakeholder responses to the July 2013 FAMR Consultation

The UK excluding the Hull Area

7.78 Of the respondents who explicitly commented on the market power assessment,\textsuperscript{348} EE, the FCS, TalkTalk, Verizon and Vodafone\textsuperscript{351} strongly agreed that BT continued to hold SMP in the WLA market in the UK excluding the Hull Area. BT also considered that the SMP designation was not unreasonable.\textsuperscript{354}

7.79 In support of this, Vodafone argued that, as long as services continued to rely upon physical access to the user’s premise, BT would retain its SMP in the provision of WLA services as alternative entry into the WLA markets was not feasible where replication of BT’s duct network and the laying of fibre, copper or cable to individual

\textsuperscript{347} For brevity we generally refer to ‘WLA’ in the market power assessment text below.

\textsuperscript{348} P.6, EE response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.

\textsuperscript{350} P.3, FCS response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Federation_of_Comunication_Services_Ltd.pdf.

\textsuperscript{351} Paragraph 2.1, TalkTalk response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/TalkTalk.pdf.

\textsuperscript{352} Paragraphs 7 and 16, Verizon response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Verizon.pdf.

\textsuperscript{353} P.20, Vodafone response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Vodafone.pdf.

\textsuperscript{354} Paragraph 148, BT response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.
user premises was required. It stated that even in higher value business markets new network construction to end-user sites was a niche occurrence.  

7.80 Similarly, TalkTalk agreed there were very high barriers to entry, there was no countervailing buyer power (given customers’ lack of outside options), and considered that there had been no market changes which would suggest BT’s high market share would fall in the foreseeable future. TalkTalk also considered it likely that the number of superfast broadband customers on the BT network would surpass the number of superfast broadband customers on Virgin’s network during the course of the next review period.  

7.81 However, BT argued that, since the last WLA market review, Virgin had continued to establish its position in both CGA and NGA broadband markets through its “doubling of speeds” programme, and argued that this growing market power was generally underestimated by Ofcom in its approach to the SMP analysis. As such, BT argued there was a strong case to understand the competitive effects of Virgin in this review, particularly in light of its relative strength in the superfast broadband portion of the wider broadband market. BT stated that it was severely constrained at both the Openreach layer and retail layer by the vertically integrated presence of Virgin, in addition to the full and extensive range of regulated copper products used by LLU and WLR based CPs.  

The Hull Area  

7.82 EE, the FCS, Verizon agreed that KCOM has SMP in the WLA market in the Hull Area.  

7.83 KCOM also did not dispute our SMP finding in the Hull Area for the period covered by this market review. However, it did refer to its expectations for a significant  

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355 P.20, Vodafone response to the July 2013 FAMR Consultation,  
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Vodafone.pdf.  
Vodafone also argued that the failure of alternative supply of NGA services using either public funds and/or BT’s duct network to make any significant impact on the market was in part due to the unrealistic restrictions upon PIA preventing alternative suppliers from achieving necessary economies of scope across any network they would build. PIA is discussed further in Section 12.  
356 Paragraphs 1.32-1.35, Annex 1, TalkTalk response to the July 2013 FAMR Consultation – annexes,  
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/TalkTalk_Annexes.pdf.  
357 Paragraph 75, BT response to the July 2013 FAMR Consultation,  
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.  
358 Paragraph 155, BT response to the July 2013 FAMR Consultation,  
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.  
359 P.6, EE response to the July 2013 FAMR Consultation,  
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.  
360 P.3, FCS response to the July 2013 FAMR Consultation,  
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Federation_of_Communication_Services_Ltd.pdf.  
361 [x]  
362 Paragraph 16, Verizon response to the July 2013 FAMR Consultation,  
competitive constraint to emerge as a result of MS3’s network rollout as raised in its response to the WFAEL market analysis (see Section 3).363

Our analysis and conclusions

7.84 Below we set out our assessment of whether BT and KCOM possess SMP in the WLA markets that we have defined above. In making that assessment we have had regard to criteria for assessing SMP set out in the EC SMP Guidelines (market share, barriers to entry and countervailing buyer power, in particular), and stakeholder responses to the July 2013 FAMR Consultation. Our general approach to the assessment of market power is described in Annex 3.

WLA market power assessment for the UK excluding the Hull Area

Market shares

7.85 As explained above, the application of the modified Greenfield approach means that we are considering a hypothetical scenario in which there is little or no use of BT’s network by third parties. In order to estimate the number of lines that BT is likely to supply in this scenario we have used the total of the number of retail lines served by BT, the number of WLR lines and the number of MPF lines. We have compared this with number of lines served by Virgin in order to calculate market shares.364

7.86 On this basis, we find that BT’s market share is consistently very high (over 80%). As set out in Annex 3, market shares of this magnitude give rise to a presumption that BT possesses SMP. Moreover, BT’s market share has been stable for many years and looking forward over the period covered by this market review we see no reason why BT’s position would weaken significantly (this view was also supported by TalkTalk).

Barriers to entry

7.87 We also consider that there are very high entry barriers to constructing on a significant scale a local access network independent of the incumbent’s network. Entry would require very high levels of investment to install local access connections between end-users’ premises and an entrant’s core network. Entry on a significant scale would be extremely risky and deployment would require a considerable period of time. This view of entry barriers was echoed by Vodafone and TalkTalk in their respective responses to the July 2013 FAMR Consultation.

Countervailing buyer power

7.88 We consider that there is likely to be insufficient countervailing buyer power to constrain BT’s position as a supplier of WLA:

364 Figures include business and residential PSTN lines, ISDN2 channels and ISDN30 channels, as well as miscellaneous other services such as Centrex. We have excluded lines served by KCOM. BT’s market share was calculated by summing the retail lines that it provides as well as the MPF lines and WLR lines it provides to other CPs. Source: Ofcom/operator data.
• retail customers (i.e. end-users) are small and atomised relative to BT’s size. The more limited coverage of Virgin’s network also limits the ability of some retail customers to credibly switch to Virgin (and thus exert buyer power on BT); and

• at the wholesale level, absent *ex ante* regulation BT may not allow third party CPs to use its access network (as is currently the case for Virgin). Even if BT did supply access to third party CPs (e.g. LLU CPs), those CPs could only effectively exert buyer power if they could credibly switch to buying WLA products from Virgin. We consider this unlikely – Virgin currently does not offer access to third parties and its network only covers part of the UK. In any event it would be difficult and costly for LLU CPs to switch to Virgin’s network given they have already built their networks to connect to BT’s. We consider that these issues also limit the wholesale constraint posed by Virgin (despite BT’s suggestion that it is constrained by Virgin at the Openreach layer). This view of limited countervailing buyer power was also made by TalkTalk in its response to the July 2013 FAMR Consultation.

**Constraint from Virgin**

7.89 We have considered BT’s argument that we should take into account Virgin’s “relative strength” in the provision of superfast broadband. As explained above, WLA involves the provision of access, as distinct from the downstream (retail) services that are provided using that access. However we recognise that a more technically advanced network, which is able to offer superior services, could potentially exert a stronger indirect constraint, and so we have considered whether there are any significant technical differences between BT’s network and Virgin’s network.365

7.90 BT has argued it is constrained at the retail and wholesale level by the vertically integrated presence of Virgin, and we note that Virgin currently has more superfast broadband subscribers on its network than BT. However, BT (like Virgin) is also in the process of upgrading its network. By the start of the review period, BT’s superfast broadband network is expected to cover approximately two-thirds of households. This is expected to rise to around 95% of households by the end of the review period, as a result of government interventions – significantly higher than Virgin’s coverage (as set out above, Virgin’s network covers approximately 48% of premises). Forecasts of superfast take-up suggest that the number of subscribers on BT’s network is likely to grow during the review period while Virgin’s net adds may start to reduce given it has already converted the majority of its customers to superfast broadband (for further details, see Section 12).366 BT has not submitted evidence that supports its proposition that it is sufficiently constrained at the wholesale level by Virgin (indeed, we note BT has maintained a very high WLA market share, as set out above). Therefore, while we agree with BT that it is constrained to some extent by Virgin at the wholesale level, we consider that the strength of this constraint is insufficient to prevent BT enjoying a position of SMP in the WLA market for this review period. Moreover, we expect factors such as technological advantages to be reflected to a large degree in current retail market shares.

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366 We note TalkTalk also raised this argument in its response to the July 2013 FAMR Consultation.
Conclusion on SMP in the UK excluding the Hull Area

7.91 We consider that BT will continue to have SMP in the WLA market outside of the Hull Area over the period covered by this market review. In particular, BT has a very high and stable market share, there are very high barriers to entry, and countervailing buyer power appears insufficient to constrain BT’s position. We did not consider that any technological differences between BT’s network and Virgin’s network are clear enough or material enough to lead us to reach a different conclusion.

WLA market power assessment for the Hull Area

7.92 We now set out our assessment of whether KCOM possesses a position of SMP in the Hull Area.

7.93 KCOM has historically enjoyed a 100% market share in the provision of WLA in the Hull Area. While the entry of MS3 is likely to reduce KCOM’s share over time, it seems very unlikely that KCOM will experience a substantial decline in its market share during the period covered by this market review given the limited reach of MS3’s network (as discussed in Section 3). In our view, KCOM is likely to continue to supply WLA to the overwhelming majority of customers in the Hull Area. As a result of its likely high market share, there is a presumption that KCOM possesses SMP.

7.94 We consider that the barriers to entry that are present in the rest of the UK also exist in the Hull Area. Similarly, countervailing buyer power is likely to be weak, particularly given the lack of alternative WLA suppliers. We recognise that MS3’s entry may provide some customers with an alternative to KCOM and shows that entry barriers are not insurmountable (as argued by KCOM). However given the current limited reach of MS3’s network we remain of the view that substantial entry barriers exist and that for the majority of customers countervailing buyer power is likely to be insufficient to constrain KCOM during the period covered by this review.

Conclusion on SMP in the Hull Area

7.95 KCOM will continue to have SMP in the WLA market in the Hull Area over the period covered by this market review. MS3’s entry is recent and we will take into account any developments in future market reviews. However, at this stage we do not consider that MS3’s presence is sufficient to offset the market power than KCOM is likely to enjoy during the current review period as a result of its very high market share, the existence of substantial barriers to entry and limited scope to exercise countervailing buyer power.
Section 8

Remedies: Approach

Introduction

8.1 In Sections 3 to 7, we set out our findings that BT (in the UK excluding the Hull Area) and KCOM (in the Hull Area only) have SMP in the following wholesale fixed access markets:

- the supply of WLA;
- the supply of WFAEL;
- the wholesale supply of ISDN30 exchange line services; and
- the wholesale supply of ISDN2 exchange line services.

8.2 In light of our market definition analyses and SMP assessments of each of the above markets, we now consider what specific regulatory obligations it is appropriate to impose (by way of SMP conditions) on each of BT and KCOM to address the SMP we have identified.

8.3 In the following sections we set out the issues we have taken into account when deciding on the specific regulatory obligations we are imposing in the various markets. We have structured these sections as follows:

- Section 10 sets out the general SMP remedies we are imposing on BT and KCOM in each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets;
- Section 11 sets out the quality of service remedies we are imposing on BT in each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets;
- Section 12 sets out the specific remedies for WLA NGA;
- Section 13 sets out the specific remedies for WLA CGA;
- Section 14 draws together our decisions on remedies in the WLA market;
- Section 15 sets out specific remedies for WFAEL;
- Section 16 summarises our approach to the charge controls we are imposing on BT in the WLA and WFAEL markets (set out in detail in Volume 2 of this Statement);
- Section 17 sets out specific remedies for wholesale ISDN30 and wholesale ISDN2;
- Section 18 sets out the charge controls we are imposing on BT for Time Related Charges and Special Fault Investigations; and
- Section 19 sets out how we will set the charge control conditions and the legal tests to which we have had regard.
8.4 In these subsequent sections we set out a number of regulatory obligations that we are imposing on BT and KCOM which are designed, cumulatively, to address the competition problems arising from the position of SMP we have found BT and KCOM to hold in these wholesale markets.

8.5 In reaching these decisions we have taken account of our approach in previous reviews of these markets, recent developments in these markets, views expressed by stakeholders in response to the 2012 FAMR Call for Inputs\textsuperscript{367}, the 2013 LLU WLR Consultation\textsuperscript{368}, the 2013 Regulatory Financial Reporting Consultation\textsuperscript{370}, the 2013 December LLU WLR Consultation\textsuperscript{371} and 2014 January FAMR Consultation\textsuperscript{372}, and expected developments over the course of the review period.

8.6 As detailed in Section 2, we are also required to take account of various EU instruments when carrying out our analysis and assessment of markets, SMP and remedies in a market review.

**Competition problems common to each of the wholesale fixed access markets**

8.7 In each of the four wholesale markets we have identified, there is a vertically integrated operator (KCOM in the Hull Area, BT in the UK excluding the Hull Area) that we have found to have SMP. In the absence of *ex ante* regulation, we consider that BT and KCOM would have the incentive, and their SMP would give them the ability, to favour their own downstream retail business over rivals in the relevant retail markets. This would distort competition in the relevant retail markets.

8.8 In the respective markets in which they have been found to have SMP, there are a variety of behaviours that BT and KCOM could engage in that may favour their own retail businesses and which could lead to competition problems in those retail markets, including:

- refusing to supply access at the wholesale level and thus restricting competition in the provision of products and services in the relevant downstream markets; and

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\textsuperscript{367} Ofcom, *Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 – Call for Inputs*, 9 November 2012, [http://stakeholders.ofcom.org.uk/binaries/consultations/summary/condoc.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/summary/condoc.pdf).

\textsuperscript{368} Ofcom, *Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 – Consultation on the proposed markets, market power determinations and remedies*, 3 July 2013, [http://stakeholders.ofcom.org.uk/binaries/consultations/summary/condoc.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/summary/condoc.pdf).


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• providing access, but only on less favourable terms compared to those obtained by their own retail business – e.g. by charging competing providers more than the amount charged to their downstream divisions, or by less favourable terms for provision and repair, or other quality discrimination.

8.9 We consider that these same concerns about distorting retail competition arise in each of the four of the wholesale markets we are assessing (i.e. WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2).

8.10 Because our view is that they have SMP in these wholesale fixed access markets, we also have concerns about BT and KCOM charging excessive prices for their wholesale services in each of these markets. This may not necessarily lead to a distortion in retail competition (for example, if all retailers were charged that same price), but would nevertheless be damaging to consumers as it would be expected to lead ultimately to higher retail prices than is necessary for the provision of the services.

8.11 Overall we consider that national and EU competition law remedies would be insufficient to address these competition problems we have identified. We therefore believe that it is appropriate to impose ex ante regulatory obligations on BT and KCOM in each of the wholesale fixed access markets in which they hold SMP in order to address those competition concerns which we have identified.

**Approach to determining remedies**

8.12 While the conditions in each of the wholesale fixed access markets are not identical (and we take account of these differences in both the general and specific remedies set out in the following sections), we nevertheless consider that BT and KCOM’s SMP in these markets is likely to give rise to similar competition problems such that, in determining the ex ante wholesale network remedies required, we have adopted the following broad approach across these markets.

8.13 Where it is not feasible for competing providers to replicate BT’s and KCOM’s network and where BT and KCOM have incentives to refuse to supply wholesale network access in the respective markets in which they possess SMP, we address this by imposing obligations requiring them to make access to that network available to other CPs on reasonable request. In each of the above wholesale fixed access markets, such a condition restricts the ability of BT and KCOM to distort competition at the retail level. To support this we are imposing a Statements of Requirements (‘SoR’) process for new network access.

8.14 In addition to a general network access requirement, we consider it appropriate to require BT to continue to provide specific forms of network access in each of the wholesale fixed access markets (VULA, PIA and SLU in WLA (NGA), LLU in WLA (CGA) and WLR in WFAEL, ISDN30 and ISDN2), and that most of these wholesale inputs and certain related services should also be subject to appropriate pricing remedies to ensure that BT does not set excessive prices to its competitors. We also impose on BT cost accounting requirements appropriate to the nature of our pricing remedies.

8.15 Other complementary general access remedies, such as non-discrimination and transparency requirements, are also imposed on BT and KCOM.

8.16 As BT and KCOM are vertically integrated, they have an incentive to provide wholesale services on terms and conditions that favour their own retail activities in a
way that would have a material adverse effect on competition. Where it is proportionate to do so (as set out in the sections below) we consider that BT and KCOM should be required to provide wholesale services on an Equivalence of Inputs (‘EOI’) basis and/or required to behave in a manner which is not unduly discriminatory.

8.17 To ensure that the imposed requirements to supply services and not discriminate are effective, we also impose a series of obligations designed to deliver transparency of information. Under these requirements, BT and KCOM must publish a Reference Offer which assists with the monitoring of their pricing strategies. They must also notify CPs of changes to charges in advance of implementation and notify technical information. We are also imposing an accounting separation obligation to support the non-discrimination requirements.

8.18 There is discretion in how these remedies can be applied, but when taken together they are designed to provide a framework for BT and KCOM with which to comply and which constrains them from behaving in a way that would exploit their SMP and enable them to act independently of competitors, customers and consumers in those markets.

**Insufficiency of national and EU competition law remedies**

8.19 We consider that national and EU competition law remedies would be insufficient to address the competition problems we have identified in each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets.

8.20 First, the upstream markets that we have identified are inputs into other downstream markets. Intervening at the upstream level can create effectively competitive downstream markets – indeed, this is highlighted by the UK experience over the last decade. Competition law, which prohibits the abuse of a dominant position, may not, however, place sufficient obligations on BT and KCOM to facilitate and sustain effective downstream competition. We do not consider that the nature and scope of the remedies that we are imposing in order to address the competition problems we have identified could be imposed equally effectively under competition law (this includes reliance on the BT Undertakings which are, in essence, a remedy under national competition law\(^{373}\)).

8.21 Second, as evidenced by the suite of remedies we are imposing, the requirements to address the competition problems in each of the wholesale fixed access markets are extensive and also include provisions to ensure that they remain effective during the three year review period. For example, we are imposing both general and specific network access obligations, in the manner and form set out in SMP services conditions in Annex 29. These conditions provide, amongst other things, for direction-making powers. These direction-making powers are important since they allow us to direct BT and KCOM as to the application of both the general and specific network access obligations, and so ensure their application can be specifically tailored to

\(^{373}\) Specifically the Enterprise Act 2002. As we explained in 2005 when we accepted them in lieu of a reference to the Competition Commission, the BT Undertakings are intended to complement ex ante regulation under the CA03. They seek to deploy a variety of mechanisms aimed at defining equivalent treatment, and at preventing and detecting discriminatory conduct by BT when supplying wholesale network access and backhaul services to its downstream competitors.
address the competition problems we have identified, both now and over the course of the three year review period.

8.22 The *ex ante* remedies we are also imposing ensure, amongst other things, that new products and services provided in the wholesale fixed access markets are captured by the relevant SMP obligations, thus ensuring their continued effectiveness to address the competition problems over the course of the three year review period.

8.23 Third, we are of the view that providing continued certainty on the types of behaviour that are/are not allowed in the wholesale fixed access markets is of paramount concern both to BT, other CPs, and to end-users. We consider that this certainty is best achieved through *ex ante* regulation. *Ex ante* regulation will also allow for timely intervention – proactively by us and/or by parties bringing regulatory disputes to us for swift resolution374 – and, consequently, timely enforcement using the powers accorded to us under the CA03 to secure compliance375 through a process with which the market in general is familiar and which is also set out in the CA03.

**Removal of regulations**

8.24 The remedies we are imposing are those which we have concluded are appropriate to address the competition problems we have identified in each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets as a result of our analysis of these markets, and which we conclude that reliance on national and EU competition law alone would be insufficient to address.

8.25 Accordingly, we impose the SMP conditions set out in Annex 29 for the reasons set out in Sections 10 to 19. As a result of this, we revoke all of the SMP services conditions imposed on BT and KCOM as set out in the following Statements insofar as they relate to the wholesale fixed access markets which we have assessed in this market review:

- 2010 WLA Statement376;
- 2010 WFAEL Statement377;
- 2010 ISDN30 Statement378; and
- 2009 Wholesale Narrowband Statement (in relation to wholesale ISDN2).379

8.26 The one exception to this is in relation to the accounting separation and cost accounting conditions:

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374 See sections 185 to 191 of the CA03, in particular section 185(1A).
375 See sections 94 to 104 of the CA03.
• while we have decided to impose new accounting separation and cost accounting conditions on BT, it is necessary to co-ordinate the revocation of the current conditions and the imposition of the new conditions on a timescale that is consistent with the preparation by BT of its RFS (which it is required to prepare under and by reference to those conditions). Consequently, we are providing for the existing accounting separation and cost accounting conditions to continue in force until the end of 31 July 2014 (the date by which BT is required to provide its 2013/14 RFS to Ofcom) and for the new accounting separation and cost accounting conditions to enter into force on 1 August 2014 (subject to a few minor exceptions where the conditions will enter into force on publication); and

• for KCOM, we will implement our decisions by amendments to the SMP conditions imposing cost accounting requirements as set out in Annex 3 to ‘The regulatory financial reporting obligations on BT and Kingston Communications - Final statement and notification’ of 22 July 2004 (‘the 2004 Accounting Statement’).

8.27 We set out a notice revoking these SMP services conditions, together with the new SMP services conditions we are imposing in each of the wholesale fixed access markets, in the notifications in Annex 29.

8.28 For the avoidance of doubt, we are not revoking the current LLU, WLR or ISDN30 charge control conditions imposed in the 2012 LLU WLR Charge Control Statement and the 2012 ISDN30 Charge Control Statement on the basis that the obligations imposed pursuant to these are either time limited or need to subsist beyond the end of the charge control period for the purposes of compliance monitoring.

Section 9

Quality of Service: Summary

Introduction

9.1 As part of the Fixed Access Market Reviews we have undertaken an examination of matters relating to the quality of service (‘QoS’) delivered by BT (through Openreach) in the supply of regulated wholesale fixed access services. In this document we set out the detail of our decisions on QoS as regards the fixed access markets covered by this review, including our decision to impose a new SMP condition on BT setting minimum service quality standards. Our decisions follow two consultations in July 2013 and December 2013. This section provides a summary of those decisions.

9.2 Our review of QoS was prompted by evidence of a decline in Openreach’s performance in relation to provision and repair activity, as well as by concerns raised by CPs. Over the past few years, CPs that are wholesale customers of Openreach have regularly raised a series of issues regarding Openreach’s performance in fixed access markets; in particular, in relation to the lead times given for engineer appointments for the provision of new lines and the period of time taken to repair faults. These issues came to the fore most recently in late spring 2012 when service levels markedly deteriorated to the clear detriment of consumers in terms of responsiveness to faults and speed of provisioning. This undermined competition in the industry as consumers were deterred from switching, and resulted in some individual CPs losing income.

9.3 In the July 2013 FAMR Consultation, we set out the results of our analysis of service quality, which included our review of Openreach’s recent performance, the impact of poor service performance and our research on the views of consumers and small and medium sized enterprises (‘SMEs’) as to what constitutes good or reasonable service quality. We also examined factors potentially affecting service performance such as the impact of adverse weather and forecasting of demand by CPs. In light of that analysis we proposed the introduction of a new SMP condition on BT imposing minimum service standards for fault repair and new line provision, where an engineer needs to visit the end-user’s home or business.\(^{383}\)

9.4 In the December 2013 LLU WLR Consultation, having considered responses received from stakeholders to our proposals, we set out the results of our analysis to support the proposed level of minimum standards to be imposed. We also presented our analysis of the associated cost impact of mandating such minimum standards.

9.5 In related work we have considered a significant amount of detailed evidence presented by Openreach and other stakeholders on the existing level of faults affecting the copper access network and expected future trends (for instance, in the light of adverse weather conditions). Clearly, the level of faults has a direct impact on the consumer experience and the cost of services, so it is critical that we ensure that Openreach is appropriately funded to manage faults that cannot be reasonably avoided, and also that there are the right incentives on Openreach to manage fault

\(^{383}\) In instances where there needs to be work undertaken at the street cabinet or in establishing or re-establishing the network connection at the consumer or business premise.
levels to an efficient level. We consider that this should include a consideration of the impact on consumers. We consulted on our initial analysis of faults in the December 2013 LLU WLR Consultation.

9.6 Further, we need to ensure that the costs of managing faults are allocated appropriately between wholesale fixed access services, particularly where there are differences in the service targets for different services. In particular, we have been considering whether existing differences in cost allocations between WLR and LLU are appropriate given the difference in service targets for these services (WLR’s default service level is Service Level 1, i.e. repairs should be completed two days after the fault has been reported, and MPF’s default service level is Service Level 2, where the repair should be completed one day after the fault has been reported). In December we also consulted on our analysis of the increased resources costs associated with repairing faults under a Service Level 2 contract as compared to repairing faults under Service Level 1 contracts (resource differences largely relate to the increased number of engineers needed for more rapid response to faults). The revised assessment of relative resource demands is included in our charge control model.

9.7 Having carefully considered responses received from stakeholders to both consultations and performed further work we now set out our decisions. This section summarises our decisions and sets out where our analysis can be found in the document. Our analysis of these complex issues has benefitted to a significant degree from the comprehensive evidence submitted by BT and other CPs. We have published in Annexes 18 and 21 the consultancy reports that we have commissioned in this review since the December 2013 LLU WLR Consultation.

Remedies

9.8 We are imposing additional obligations on BT to address concerns in relation to the quality of service delivered by BT (through Openreach) in the supply of regulated wholesale fixed access services. We summarise each of these below.

Minimum Standards

9.9 We have decided that it is appropriate to impose a set of minimum standards on fault repair and provisioning (requiring an engineer to visit a customer’s home or business) for WLR and MPF.

9.10 The minimum standards we are imposing over the next three years for WLR and MPF products are set out in Table 9.1 below. For the repair and provision appointment completion minimum standards we have set transitional targets for the first and second years. We are not setting minimum standards for SMPF products at this time as we are not aware of material concerns with respect to QoS for this product.

9.11 In setting the new minimum standards we have also considered the need to take account of force majeure events, such as extreme weather conditions, (in Openreach parlance ‘Matters Beyond Our Reasonable Control’ or ‘MBORC’\(^{384}\)). We have

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\(^{384}\) MBORC is a contractual provision contained in all Openreach contracts which releases Openreach from liability under the relevant product terms and conditions in circumstances where the cause of the incident is beyond Openreach’s reasonable control, and the fix to remedy within contractual timescales is also beyond Openreach’s reasonable control. High-level MBORCs are defined as where over 2,000 lines or end-users are
decided to adjust our minimum standard by a fixed amount to account for expected normal levels MBORC within each region. Further, in order to accommodate the uneven distribution of the most severe MBORCs, we have decided to exclude from the assessment failures where Openreach has declared a ‘high level MBORC’ in up to two general manager (‘GM’) regions in a year, subject to a time limit on this exclusion set by reference to the amount of time it can be used for any particular “high level MBORC”.

Table 9.1: Minimum Openreach service quality standards for WLR and MPF products (includes force majeure allowance)

<table>
<thead>
<tr>
<th>Minimum standard</th>
<th>MBORC allowance</th>
<th>First Year</th>
<th>Second Year</th>
<th>Final Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repair completion within SLA timescales</td>
<td>3%</td>
<td>67%</td>
<td>72%</td>
<td>77%</td>
</tr>
<tr>
<td>12 day provision appointment availability</td>
<td>1%</td>
<td>54%</td>
<td>67%</td>
<td>79%</td>
</tr>
<tr>
<td>Provision appointment completion by appointment date</td>
<td>1%</td>
<td>89%</td>
<td>89%</td>
<td>89%</td>
</tr>
</tbody>
</table>

Source: Ofcom

9.12 Failure to achieve these annual minimum standards will represent a breach of the SMP condition and will render BT subject to potential sanctions. Our analysis on the minimum standards is set out in Section 11 and Annex 17.

9.13 We have also republished in Annexes 30 and 31 the evidence and the analysis we carried out last year which led us to developing our conclusions on minimum standards. This evidence was originally published in the July 2013 FAMR Consultation.

Increased reporting of key performance indicators (‘KPIs’)

9.14 We have directed BT to report a set of KPIs for WLR, LLU, GEA, wholesale ISDN2 line rental and wholesale ISDN30 line rental services. This decision increases the range and granularity of the KPIs that BT is required to report to Ofcom and to industry. This will allow us to more closely monitor Openreach performance and respond if necessary to any trends.

9.15 A subset of these KPIs (specifically in relation to the installation of new lines, repair of faults and late installations and fault repairs) is to be published with unrestricted access on a BT Group website every 3 months, 14 working days after the three month end. We have set a backstop date of 20 October 2014 for the first report but will work with BT to produce it as soon as possible.

9.16 Our work on KPIs is set out in Section 11 and a full list of KPIs to be reported is included in the Legal Instrument in Annex 29.

affected, as incidents which are the subject of regional or national media interest, or which are likely to become so, and also anything likely to have a significant impact on the BT and/or Openreach brand. To declare a high level MBORC the incidents must be referred immediately to a Legal Adviser. They are not declared locally by an engineer. In assessing their compliance with our standards Openreach will be able to exclude failures against the fault and provisioning standards during high level MBORC declarations in any two GM regions in a given year.

\[385]\text{In assessing their compliance with our standards Openreach will be able to exclude failures against the fault and provisioning standards during high level MBORC declarations in any two GM regions in a given year.}\]
Specification of contractual targets and compensation agreements in Reference Offers

9.17 We have imposed an obligation on BT to include SLAs and SLGs in the Reference Offers for specified elements of certain services. Previously there was a more generic obligation in relation to offering these SLA/SLGs. Specifically, this requirement will ensure that the new Generic Ethernet Access (‘GEA’) service (BT’s VULA product) has appropriate provisioning SLAs. Our analysis is covered within Section 10.

Principles to improve conduct in contract negotiation process

9.18 Following concerns raised to us by CPs we have set out principles to guide the conduct of the process for negotiating new, or modifications to, SLA/SLGs. These principles include a clearer role for the Office of the Telecommunications Adjudicator (‘OTA2’) and a recommended six month time limit for negotiations. Failure to agree terms on this basis may result in formal Ofcom intervention in the future. Our explanation is included in Section 11.

Approach to setting charge controls

9.19 The modelling assumptions and adjustments in relation to QoS for the purpose of the charge controls set in this Statement are summarised below.

Minimum Service Quality Standards

9.20 To enable BT to recover its efficiently incurred costs associated with delivering to the new minimum service quality standards, we have increased the 2011/12 base year level of engineering resource for provisioning and fault repair within the model by 3.9%. The modelling work we have undertaken to calculate this is described in Annex 17.

9.21 Our work has been supported by Analysys Mason. In our December 2013 Consultation we included a report from Analysys Mason on the service quality resource modelling. We received stakeholder responses to this report and subsequently Analysys Mason has provided comments on these responses. These comments are included in Analysys Mason’s report in Annex 18.

Service level costs differential

9.22 Our work has involved estimating the difference in resources associated with delivering repairs to Service Level 1 (i.e. WLR) and Service Level 2 (i.e. MPF and SMPF) products and the consequential cost differential for the purposes of the charge control model. We have decided to modify our December 2013 LLU WLR Consultation proposal on this cost differential. Having corrected for an error identified in the modelling and a change to our assumption regarding economies of scope we have now set the difference in resource use between the service at 21%. Our analysis is set out in Annex 19.

Fault rates

9.23 In response to concerns expressed by Openreach and other stakeholders on fault rate levels and trends for the access services, we have undertaken detailed and extensive analysis of fault and line data and factors suggested by stakeholder as likely to influence faults.
9.24 Our analysis has included assessment of network structures, weather impacts, broadband impacts and the difference in fault propensity between different services. This analysis has important implications for the charge controls set for LLU and WLR services as the cost of repairing faults is a significant proportion of the service cost stacks.

9.25 Our cost modelling assumptions in relation to faults are as follows:

- 2011/12 is the appropriate base year as fault levels in that year are consistent with the average over the last few years;

- there is no clear evidence of a continuing upward trend in fault rates over the period. We have therefore assumed that fault rates assumed for 2016/17 will be the same as those experienced in 2011/12; and

- fault rates for MPF are the same as fault rates for lines with WLR and SMPF. Following further analysis since the December 2013 LLU WLR Consultation we have, however, modified the relative fault rates to 1.00: 0.83: 0.17 for MPF: WLR: SMPF.

9.26 Our analysis is set out in Annex 20. Our work has been supported by Cartesian (formerly CSMG). In the December 2013 LLU WLR Consultation we set out Cartesian’s fault rate report. Since then, Openreach has provided modified fault data which Cartesian has assessed. Cartesian’s updated report is included in Annex 21.

**Ongoing Work**

**Retail experience**

9.27 The remedies imposed in this Statement on QoS will provide a robust framework to incentivise service improvement by Openreach and make their performance more transparent. However, it is essential that, as well as improved QoS, consumers can get redress when things go wrong, including compensation where appropriate. This is the responsibility of retail providers.

9.28 Ofcom will review retail standards of redress for failures in provisioning and repair to ensure that this works well for consumers in combination with the quality standards which are set for Openreach.

**Monitoring and future QoS assessments**

9.29 Several stakeholders have expressed concern that as Openreach focuses attention to meet the minimum standards, it may divert its attention from meeting the needs of business in the copper network and other regulated non-copper products.

9.30 To address this we will be monitoring KPI data to ensure that trends in performance are indicative of consistent if not improving service delivery. We are also aware of developments in business specific KPIs which we will also incorporate into our monitoring programme.

9.31 We have also begun investigating Openreach’s performance in relation to Ethernet products and we are regularly receiving Ethernet KPI information. We will monitor the
impact of the minimum standards imposed in this review on Ethernet performance. We note in this context that we have invited stakeholders’ views on QoS in our recent Call for Inputs for the next Business Connectivity Market Review.\textsuperscript{386}

Section 10

Remedies: General remedies for wholesale fixed access markets

Introduction

10.1 In this section we set out our decisions for imposing a number of general remedies on BT and KCOM.

10.2 By general remedies, we mean those which apply generally to address the competition problems associated with SMP across each of the wholesale fixed access markets (in particular general network access, non-discrimination, transparency requirements and certain aspects of quality of service that are implemented pursuant to general remedies) and do not relate to requirements to provide specific forms of access such as VULA, LLU and WLR.

10.3 Our decisions on specific remedies relating directly to quality of service which apply across each of the wholesale fixed access markets and our consideration of broader quality of service issues are set out in Section 11.

10.4 Our decisions regarding specific access remedies, the pricing of specific access products and services, and associated cost accounting requirements are discussed in Sections 12 to 19 (Volume 2 sets out in detail our approach to LLU and WLR (WFAEL) charge controls).

10.5 Table 10.1 summarises the general remedies that we have decided to impose on BT in respect of each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the UK excluding the Hull Area and for KCOM in the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the Hull Area.
<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>General remedies</th>
<th>KCOM (in the Hull Area only)</th>
</tr>
</thead>
</table>
| BT (in the UK excluding the Hull Area) | - Provide network access on reasonable request  
- Publish a process for new network access  
- Requirement not to unduly discriminate and EOI  
- Accounting separation  
- Publish a Reference Offer (including specifying services subject to SLAs/SLGs)  
- Notify changes to charges, terms and conditions  
- Notify technical information  
- Cost accounting | - Provide network access on reasonable request  
- Publish a process for new network access  
- Requirement not to unduly discriminate  
- Accounting separation  
- Publish a Reference Offer  
- Notify changes to charges, terms and conditions  
- Notify technical information |
| WLA | - Provide network access on reasonable request  
- Publish a process for new network access  
- Requirement not to unduly discriminate and EOI  
- Accounting separation  
- Publish a Reference Offer (including specifying services subject to SLAs/SLGs)  
- Notify changes to charges, terms and conditions  
- Notify technical information  
- Cost accounting | - Provide network access on reasonable request  
- Publish a process for new network access  
- Requirement not to unduly discriminate  
- Accounting separation  
- Publish a Reference Offer  
- Notify changes to charges, terms and conditions  
- Notify technical information |
| WFAEL | - Provide network access on reasonable request  
- Publish a process for new network access  
- Requirement not to unduly discriminate and EOI  
- Accounting separation  
- Publish a Reference Offer (including specifying services subject to SLAs/SLGs)  
- Notify changes to charges  
- Notify technical information  
- Cost accounting | - Provide network access on reasonable request  
- Publish a process for new network access  
- Requirement not to unduly discriminate  
- Accounting separation  
- Publish a Reference Offer  
- Notify changes to charges, terms and conditions  
- Notify technical information |
| ISDN30 | - Provide network access on reasonable request  
- Publish a process for new network access  
- Requirement not to unduly discriminate and EOI  
- Accounting separation  
- Publish a Reference Offer (including specifying services subject to SLAs/SLGs)  
- Notify changes to charges  
- Notify technical information  
- Cost accounting | - Provide network access on reasonable request  
- Requirement not to unduly discriminate  
- Accounting separation  
- Publish a Reference Offer  
- Notify changes to charges, terms and conditions  
- Notify technical information |
| ISDN2 | - Provide network access on reasonable request  
- Publish a process for new network access  
- Requirement not to unduly discriminate and EOI  
- Accounting separation  
- Publish a Reference Offer (including specifying services subject to SLAs/SLGs)  
- Notify changes to charges  
- Notify technical information  
- Cost accounting | - Provide network access on reasonable request  
- Requirement not to unduly discriminate  
- Accounting separation  
- Publish a Reference Offer  
- Notify changes to charges, terms and conditions  
- Notify technical information |
10.6 In summary, the changes we have decided to impose in this review from the existing remedies currently imposed on BT and KCOM in the wholesale fixed access markets are:

- to require BT and KCOM to ensure that their SoR guidelines meet a further principle that the reasons for rejecting SoRs are clear and transparent;
- to impose a requirement on BT to provide network access on an EOI basis but only to the extent that BT already provides wholesale products and services on an EOI basis including through its agreement with Ofcom (‘the BT Undertakings’);
- to impose an accounting separation requirement on KCOM in the wholesale ISDN30 market;
- to reduce the 90 day notice period currently imposed on BT and KCOM for changes to the ISDN2 WLR rental charge down to 28 days;
- to provide for reductions in charges (including special offers) for WLA network access products and services and WLR rental charges (in the WFAEL market) to be made with 28 days’ notice; and
- to require BT to at least offer SLAs and SLGs for specified services within the WLA, WFAEL, ISDN2 and ISDN30 markets.

**Approach to general remedies**

10.7 In Section 8 we set out our approach to SMP remedies in light of our findings of SMP in wholesale fixed access markets. In this sub-section we discuss our approach to general remedies in particular. We set out the existing general remedies for each of the wholesale markets under review and our approach to general remedies in this review.

**Existing general remedies in the wholesale fixed access markets**

10.8 Table 10.2 below summarises the current general remedies imposed on BT and KCOM in the wholesale fixed access markets.

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Table 10.2: Summary of current general remedies

<table>
<thead>
<tr>
<th>Requirement</th>
<th>WLA</th>
<th>WFAEL</th>
<th>Wholesale ISDN30</th>
<th>Wholesale ISDN2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide network access on reasonable request</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
</tr>
<tr>
<td>No undue discrimination</td>
<td>BT (excluding VULA[389]), KCOM</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
</tr>
<tr>
<td>Basis of charges – cost orientation</td>
<td>BT (excluding VULA), KCOM</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
</tr>
<tr>
<td>Publish a Reference Offer</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
</tr>
<tr>
<td>Notify changes to charges, terms and conditions</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
</tr>
<tr>
<td>Notify technical information</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
</tr>
<tr>
<td>Transparency as to quality of service</td>
<td>BT</td>
<td>BT</td>
<td>BT</td>
<td>BT</td>
</tr>
<tr>
<td>New network access</td>
<td>BT, KCOM</td>
<td>BT, KCOM</td>
<td>BT</td>
<td>BT</td>
</tr>
<tr>
<td>Cost accounting</td>
<td>BT</td>
<td>BT, KCOM</td>
<td>BT</td>
<td>BT, KCOM</td>
</tr>
<tr>
<td>Accounting separation</td>
<td>BT</td>
<td>BT, KCOM</td>
<td>BT</td>
<td>BT, KCOM</td>
</tr>
</tbody>
</table>

General approach as set out in the July 2013 FAMR Consultation

10.9 In their initial responses to the 2012 FAMR Call for Inputs[390], most stakeholders did not consider that there had been significant changes in the wholesale fixed access markets that suggested that we should alter our overall approach to general remedies, or they otherwise considered that the general remedies remained broadly appropriate for the period of this market review.[391]

10.10 Our analysis of competition in each of the wholesale fixed access markets, detailed in the July 2013 FAMR Consultation, indicated that there had been no significant changes in the relevant markets. In broad terms, we therefore took a similar approach in considering appropriate general remedies to that taken in previous market reviews. We did, however, propose some changes which we considered were appropriate. In light of responses to the July 2013 FAMR Consultation, we

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[388] Table 10.2 also shows the existing Basis of charges and Transparency as to quality of service conditions. These remedies are discussed further in the following sections.

[389] VULA is subject to an EOI obligation (a stricter form of anti-discrimination remedy).


[391] Published responses to the 2012 FAMR Call for Inputs are available at http://stakeholders.ofcom.org.uk/consultations/fixed-access-markets/?showResponses=true.
10.11 All our proposals for general remedies, stakeholders’ views on them, our further considerations and decisions (including our reasoning) are set out in detail below.

**General remedies for the wholesale fixed access markets**

10.12 In this sub-section, we set out our considerations and reasoning in respect of the general remedies we have decided to impose for the wholesale fixed access markets. The aim and effect of our regulation is common to each of BT and KCOM and in respect of each of the wholesale markets under review, unless otherwise identified.

10.13 Where there are differences, we set these out in relation to the aim and effect of the regulation we have decided to impose on BT or KCOM in light of the particular competition problems we have identified in specific markets.

10.14 We assess each general remedy in turn by setting out:

- the current remedies;
- the aim and effect of the regulation;
- our proposals as set out in the July 2013 FAMR Consultation (and our further proposals as set out in January 2014 FAMR Consultation where applicable);
- stakeholder responses to our proposals;
- our further considerations, reasoning and our decisions; and
- our consideration of the relevant legal tests for imposing the regulation.

**Requirement to provide network access on reasonable request**

**Current remedies**

10.15 BT and KCOM are currently required to provide network access on reasonable request and to provide such access as soon as it is reasonably practicable and on fair and reasonable terms, conditions and charges or such other terms, conditions and charges we may from time to time direct. Table 10.3 details the relevant current SMP conditions.

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393 This is because the competition issue arising from BT’s or KCOM’s SMP that we are seeking to address is the same in each of the wholesale fixed access markets.
### Table 10.3: Current SMP conditions to provide network access on reasonable request

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Existing SMP conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT (in the UK excluding the Hull Area)</td>
<td>KCOM (in the Hull Area only)</td>
</tr>
<tr>
<td>WLA</td>
<td>SMP condition FAA1</td>
</tr>
<tr>
<td>KCOM (in the Hull Area only)</td>
<td>SMP condition FBB1</td>
</tr>
<tr>
<td>WFAEL</td>
<td>SMP condition AAAA1(a)</td>
</tr>
<tr>
<td>KCOM (in the Hull Area only)</td>
<td>SMP condition AAAB1(a)</td>
</tr>
<tr>
<td>ISDN30</td>
<td>SMP condition AAA(IS)1(a)</td>
</tr>
<tr>
<td>KCOM (in the Hull Area only)</td>
<td>SMP condition AAB(IS)1</td>
</tr>
<tr>
<td>ISDN2</td>
<td>SMP condition AAA1(a)</td>
</tr>
<tr>
<td>ISDN2</td>
<td>SMP condition AAB1</td>
</tr>
</tbody>
</table>

### Aim and effect of regulation

10.16 As our analyses in the preceding sections show, the level of investment required by a third party to replicate BT and KCOM’s networks and build sufficiently large access networks to compete is a significant barrier to entry. In our view, an obligation requiring dominant providers to make access\(^{394}\) to their network facilities available to third parties on reasonable request is fundamental to promoting competition in downstream markets. We consider that, in the absence of such a requirement, BT and KCOM would have an incentive and the ability to refuse access at the wholesale level thereby favouring their own retail operations with the effect of hindering sustainable competition in the corresponding downstream markets, ultimately against end-users’ interests.

### Proposals as set out in the July 2013 FAMR Consultation

10.17 We proposed that a general network access condition should apply to BT and KCOM in the following markets as shown in Table 10.4 below:

### Table 10.4: Proposed general network access obligations

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Proposed general network access obligations</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT (in the UK excluding the Hull Area)</td>
<td>KCOM (in the Hull Area only)</td>
</tr>
<tr>
<td>WLA</td>
<td>Yes including fair and reasonable charges where no charge control or Basis of charges obligation applies</td>
</tr>
<tr>
<td>KCOM (in the Hull Area only)</td>
<td>Yes including fair and reasonable charges</td>
</tr>
<tr>
<td>WFAEL</td>
<td>Yes including fair and reasonable charges where no charge control or Basis of charges obligation applies</td>
</tr>
<tr>
<td>KCOM (in the Hull Area only)</td>
<td>Yes including fair and reasonable charges</td>
</tr>
<tr>
<td>ISDN30</td>
<td>Yes including fair and reasonable charges where no charge control or Basis of charges obligation applies</td>
</tr>
<tr>
<td>KCOM (in the Hull Area only)</td>
<td>Yes including fair and reasonable charges</td>
</tr>
<tr>
<td>ISDN2</td>
<td>Yes including fair and reasonable charges where no charge control or Basis of charges obligation applies</td>
</tr>
<tr>
<td>KCOM (in the Hull Area only)</td>
<td>Yes including fair and reasonable charges</td>
</tr>
</tbody>
</table>

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394 Network access is defined in sections 151(3) and (4) of the CA03. We consider that a requirement to provide network access would, therefore, include any ancillary services as may be reasonably necessary for a third party to use the services.
10.18 In the July 2013 FAMR Consultation we also considered whether the current service level agreement (‘SLA’) and service level guarantee (‘SLG’) provisions in Openreach’s contracts with wholesale customers for WLR and MPF are consistent with the requirements to provide network access. We specifically considered whether it would be appropriate to make directions (under our proposed network access conditions) with regard to the SLAs in place for WLR and MPF for provisioning appointment availability and repairs. After considering the available evidence, our provisional view was that we were not minded to make any such directions.

10.19 In the July 2013 FAMR Consultation we asked:

10.1 Do you agree with our proposals regarding requirements on BT and KCOM to provide network access on reasonable request? Please provide reasons in support of your views.

10.2 Do you agree with our conclusion not to seek to modify SLAs or SLGs as a mechanism for quality of service improvement? If not, how would you modify the SLAs and or SLGs and on what basis and how would you ensure that such changes did not have unintended incentive consequences? Specifically do you consider that the existing SLA for provisioning appointments (12 days from next year) is adequate? Please provide reasons in support of your views.

Stakeholder responses to the July 2013 FAMR Consultation

Requirements to provide network access on reasonable request

10.20 All stakeholders who responded to this question broadly agreed with our proposal to require BT and KCOM to provide network access on fair and reasonable terms, conditions and, in the absence of other pricing regulation, charges.

10.21 BT considered the proposal to impose a network access condition on it in relation to reasonable requests and on fair and reasonable terms remained appropriate given it was the continuation of regulation that had been in place for some time in wholesale markets where BT had been found to have SMP.

10.22 KCOM also considered the remedy to be appropriate, but questioned whether it was necessary to continue to apply the general access obligation for ISDN2 and ISDN30 in the Hull Area. KCOM suggested that because we proposed not to impose any specific obligations on it relating to requests for new forms of wholesale ISDN2 or ISDN30 network access, the same logic applied to other general remedies. KCOM further questioned the benefits of continuing to apply remedies to a legacy product market with small and declining volumes and argued that it had a commercial

395 Paragraph 10.44, Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - Consultation on the proposed markets, market power determinations and remedies, 3 July 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/summary/fixed-access-markets.pdf.

incentive to continue to offer its existing wholesale ISDN2 and ISDN30 retail-minus products absent regulation.\textsuperscript{397}

10.23 Virgin also broadly agreed with the proposal to impose a network access obligation. However, Virgin expressed concerns that this reflected a trend in which Ofcom moved from cost-orientation measures towards providing access charges on a fair and reasonable basis. It considered that there was an absence of guidance on what was meant by fair and reasonable in the context of a price control condition. Virgin also expressed concerns that Ofcom appeared to be concerned only with excessive pricing whereas Virgin had concerns that BT might have an incentive to price certain products below cost (for example, in order to incentivise consumer take-up at the retail level).\textsuperscript{398}

10.24 Verizon \footnote{Paragraphs 17-18, Verizon, response to July 2013 FAMR Consultation – quality of service, September 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach_-_Quality_of_Service.pdf.} therefore considered that, where charge controls had not been applied, it was important that the general network access remedy should also be applied to charges.\textsuperscript{399}

\textit{The adequacy of existing SLAs and SLGs}

10.25 Several stakeholders made comments with regard to our provisional conclusion not to modify SLAs or SLGs as a mechanism for improving service quality:

- BT\textsuperscript{400}, the FCS\textsuperscript{401} and Virgin\textsuperscript{402} broadly supported our provisional conclusion that Ofcom should not modify SLAs and SLGs;

- Openreach also agreed that it was correct not to impose additional or more stringent SLAs, or to increase the level of existing SLGs via regulation. Openreach argued that some existing SLGs were set at a punitive level and that "Ofcom should take the opportunity to review the current SLG levels as part of the 2008 SLA direction"\textsuperscript{403}; and

- Openreach also argued that the link between CP forecasting accuracy and SLG payments should be extended (particularly where SLAs include the use of Openreach engineering resources). Openreach added that this proposal could be tabled via industry forums, but that Ofcom should update the 2008 SLG Statement.

\footnotesize
\textsuperscript{397} P.6, KCOM response to July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/KCOM.pdf.
\textsuperscript{400} P.10, Virgin Media, Response to the July 2013 FAMR Consultation, September 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Federation_of_Communication_Services_Ltd.pdf.
\textsuperscript{402} P.10, Virgin Media, Response to the July 2013 FAMR Consultation, September 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Virgin_Media.pdf.
to explicitly permit linkages between CP forecasting accuracy and SLG payments.\textsuperscript{404}

10.26 Conversely, a number of stakeholders considered that Ofcom should be taking a more active role during this review by setting or modifying SLAs and SLGs (possibly via an SMP condition) or by closely monitoring BT’s performance in certain areas:

- Sky was critical of our view that minimum standards should be based on the existing SLAs and argued that the reasonableness of SLA targets had not been properly scrutinised.\textsuperscript{405} Sky submitted a report from consultancy Webb Henderson ("the Webb Henderson report") which suggested that the SLA regime in the UK may now be "falling behind" those in some other countries.\textsuperscript{406} The Webb Henderson report recommended options for us to consider, such as a "credible threat of regulatory intervention for consistent poor performance", "more controlled/limited carve outs from SLAs and SLGs" as well as a greater role for the OTA2.\textsuperscript{407} Sky stated that there was a pressing need for improvements to existing SLAs and SLGs, as well as the development of new SLAs for a range of services (and provided lists of both additional SLAs and SLGs that it considered should be included in BT’s Reference Offers and substandard or missing SLAs and SLGs).\textsuperscript{408} Sky also stated that we should ask the OTA2 to immediately start work with industry to address the backlog of SLAs that were missing or needed improvement;

- [\textsuperscript{\textcopyright}] also considered that the SLAs needed to be improved and argued that our proposals would signal regulatory acceptance of the current SLAs to Openreach, thereby hampering industry negotiations for improvements to SLAs and SLGs. It argued that the only way to correctly incentivise BT overall would be to broaden the SMP condition by requiring BT to offer specific additional SLAs and SLGs (and it provided a suggested list of additional SLAs)\textsuperscript{409};


\textsuperscript{409} [\textcopyright]
• TalkTalk considered that Ofcom should set SLAs and SLGs as part of the FAMR process through an SMP condition or a similar regulatory instrument. While it supported the minimum standards proposal, it noted that SLAs and SLGs continued to play an important role for several reasons – because they covered more products and services; because the SLG-related compensation was paid (either directly or indirectly) to customers and, as such, could enable goodwill payments to end-users; and because they were made more quickly than payments would be after the imposition of fines (under the minimum standards proposal). It also noted that SLGs should be set to cover the genuine pre-estimate of CP losses in full;410;

• KCOM was also concerned that we were not planning to specify in more detail the terms under which Openreach should offer its services, specifically in relation to SLA and SLG provisions. Like TalkTalk, it had concerns about the level of payments for which “commercially negotiated” SLAs and SLGs provided. In relation to our minimum standards proposal, KCOM commented that “determining whether there has been a breach will always be a retrospective exercise that will not address the need for timely payment of compensation to customers for failure to deliver”, and411

• Verizon stated that, while it appreciated concerns about the potential for gaming, it also considered that significant improvements could be made simply by Ofcom taking a more active role in monitoring Openreach’s performance, particularly with regard to Ethernet issues.412

10.27 Vodafone argued that there needed to be an incentive to improve service quality for the business market, where, it argued, late delivery and extended loss of service had a greater impact on end-users. A combined regime for residential and business customers did not in its view adequately address service quality problems for business customers (as BT’s incentives lie with resolving volume residential market issues).413 It further argued that Ofcom should ensure that Openreach responded to changes in demand for particular service levels, in particular for higher service levels.414

10.28 Several stakeholder provided views on the adequacy of the existing SLA for provisioning appointments:

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• Openreach stated that the 12-day SLA was a reasonable standard and further reductions would be a premium proposition\textsuperscript{415};

• BT stated that, while it did not perceive a need for regulatory intervention to impose a change to SLAs, it would like lead times (where engineering work is required) to continue to fall \textsuperscript{[\textless \times]}\textsuperscript{416}. Alternatively, it would seek to negotiate better SLAs for customers with specific needs, such as home movers\textsuperscript{416};

• BT reported that its market research indicated that residential customers had much higher expectations about provision timescales than the current SLA targets. \textsuperscript{[\textless \times]}\textsuperscript{417} BT considered that the current SLAs should be a backstop and the aspiration should be for \textsuperscript{[\textless \times]}\textsuperscript{417} BT’s research also showed that most residential customers were not willing to pay extra for a faster provision service so the price-performance trade-off needed careful consideration;

• Virgin cautioned that the 12-day provisioning appointment SLA needed to be “viewed in the overall context of how negotiations are undertaken and should not necessarily be taken to be an acceptance by industry of an ideal standard” \textsuperscript{418};

• the FCS queried Ofcom’s proposal not to reduce the provisioning appointment lead time SLA in light of research which showed that most customers found a lead time greater than 10 days unacceptable\textsuperscript{419};

• Sky argued that consumers expected a shorter provisioning appointment SLA than 12 days and that we should reduce the target for appointed installations to 5-7 days in stages over the market review period\textsuperscript{420}; and

• TalkTalk considered that consumers’ interests would be best met if Openreach offered a choice of service levels and priced these to reflect its (incremental) cost differences. In the case of new provides, TalkTalk suggested that Openreach could offer an option of a shorter lead-time of, for example, 5 days alongside the current 12 day service. TalkTalk argued that this approach would give consumers a greater choice of services to fit their needs and allow the market to “discover”\textsuperscript{421};


\textsuperscript{417} Paragraph 113, BT response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.

\textsuperscript{418} P.10, Virgin response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Virgin_Media.pdf.

\textsuperscript{419} P.3, FCS response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Federation_of_Communication_Services_Ltd.pdf.

the appropriate level of service (rather than Ofcom “ordaining” it by selecting a single standard service level). 421

10.29 Sky422 and TalkTalk423 proposed that we publish further guidance in the three following areas setting out:

- how to estimate CP losses (where these are relevant to SLGs);

- if and how BT can link SLAs and SLGs to CP demand forecasts. Sky stated that the link between demand forecasts and the provisioning appointment lead time SLG required an unreasonable degree of forecast accuracy. It also suggested that there was no evidence that Openreach used the demand forecasts to improve service quality. Sky noted that the 2008 SLG Statement had required Openreach to remove a contractual link between forecasting and SLG payments. Sky proposed that guidance should state that it was inappropriate to link SLGs to demand forecasts in the case of SLAs and SLGs other than provisioning appointment lead time; and

- how and when Openreach could declare MBORC (see Section 11).

10.30 Sky further stated that Ofcom should publish guidance considering the appropriateness of proactive SLG payments and how Openreach calculated them.424

10.31 Sky also raised the point that if the 10 GM regions were used as the basis for regulated minimum standards for service quality then the requirements for CP forecasting set out in the current Copper Appointment Availability SLA (currently based on 27 forecast regions) should be aligned with this approach.425

Reasoning and decisions on requirement to provide network access on reasonable request

Requirements to provide network access on reasonable request

10.32 Section 87(3) of the CA03 authorises Ofcom to set SMP services conditions requiring the dominant provider to provide network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network

422 Paragraphs 4.8-4.9, Sky response to the July 2013 FAMR Consultation – quality of service, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Sky_Quality_of_Service.pdf. Sky also proposed that the further guidance should address the publication of KPIs, which we address in Section 11.
access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions. Section 89(9) of the CA03 also authorises SMP services conditions imposing on the dominant provider such rules as they may make in relation to matters connected with the provision of network access about the recovery of cost and cost orientation.

10.33 We have decided to impose an SMP obligation requiring BT to provide network access where a third party reasonably requests it in respect of each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the UK excluding the Hull Area in which we have found that BT has SMP. We have also decided to impose an equivalent obligation on KCOM in the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets for the Hull Area in which we have found that KCOM has SMP.

10.34 In relation to KCOM’s arguments regarding the application of the condition to the wholesale ISDN2 and ISDN30 markets in the Hull Area, we refer to our market analysis and market power assessments of these markets in Sections 4 and 5 in which we have found that KCOM has SMP in these wholesale markets. Notwithstanding that our analysis of these markets shows a continued gradual decline in volumes for these legacy products over the period of this review, we conclude that KCOM nevertheless continues to have an incentive and the ability to refuse access at the wholesale level as a result of its position of SMP at the wholesale level. Therefore, we consider that KCOM should continue to be required to provide network access on reasonable request in the wholesale ISDN2 and ISDN30 markets; this is quite distinct from our view that KCOM should not be subject to specific requirements in relation to handling requests for new forms of wholesale ISDN network access given that demand for a new ISDN product by another provider in the Hull Area is unlikely.

10.35 We also consider that imposing requirements to provide specific forms of access, such as WLR and LLU on KCOM, in the absence of clear evidence of demand, to be disproportionate and inappropriate at this time. Requiring KCOM to develop such specific forms of network access now would impose costs on KCOM which might be passed onto its customers without our being clear that, in doing so, Hull Area consumers would derive competition benefits. We therefore consider that opportunities for competition are best met by continuing to rely instead on general and new access obligations.426

10.36 The condition requires BT and KCOM to provide network access on fair and reasonable terms and conditions. This obligation also applies to charges, except in relation to those services where we are imposing another form of pricing obligation, such as a charge control (certain LLU, WLR, ISDN2, ISDN30 services and the VULA CP-CP migration charge) or a Basis of charges obligation (certain other LLU, WLR, PIA and SLU services).

10.37 In the case of both BT and KCOM, we consider that a fair and reasonable charges obligation (where applied) is necessary to address, in each of the WLA, WFAEL, wholesale ISDN2 and wholesale ISDN30 markets, our concerns of a relevant risk of adverse effects arising from a price distortion if BT or KCOM (as applicable) fixes and

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426 We are imposing a new network access requirement on KCOM in the WLA and WFAEL markets in the Hull Area as discussed later in this section.
maintains its prices at an excessively high level for existing and future services in these markets. We have not imposed the requirement to provide network access on fair and reasonable charges where we either impose a charge control or a Basis of charges obligation since, in our view, these pricing requirements are sufficient to address our competition concerns in relation to excessive pricing such that additional price regulation is not required. This provision also applies to new products and services which BT might introduce during the market review period but which do not wholly or substantially replace existing services which will still be covered by our ex ante pricing remedies.

10.38 In Volume 2, Section 4, we set out our decision in relation to maintaining the alignment of LLU enhanced care service charges with WLR enhanced care service charges. Given that this alignment obligation only constrains the relative prices between LLU and WLR enhanced care services and not the absolute level of charges, we are also applying a fair and reasonable charges obligation in addition to this alignment obligation. Where a charge is subject to an alignment obligation but is not accompanied by a charge control or cost orientation obligation, we consider that it is appropriate to address the risk of excessive pricing by making it subject to the fair and reasonable charges obligation. In order to make this clear on the face of the legal instrument, we have made a further amendment to the requirement to provide network access which we are imposing on BT as set out in Annex 29.

10.39 For VULA (where we have decided not to impose cost-based price regulation and allow BT flexibility on VULA pricing levels – see Section 12), BT is required to ensure that its charges for network access should be fair and reasonable.

10.40 We note BT's comments regarding our consideration of NGA requirements, which we address in Section 12. With regard to Virgin’s concerns, we have imposed such ex ante pricing remedies427 as we consider are appropriate to address the adverse effects we have identified in this review arising from the dominant provider exploiting its market power to the detriment of end-users.428 We also briefly discuss the pricing of VULA ‘too low’ in paragraph 12.141, noting in particular that BT would of course be subject to the predatory pricing provisions of competition law.

10.41 KCOM is currently subject to a Basis of charges obligation in respect of WLA, WFAEL and wholesale ISDN2. However, we have not re-imposed this obligation on KCOM as we consider that a requirement on KCOM for fair and reasonable charges is sufficient to deal with our concerns regarding excessive pricing for its wholesale services in each of the wholesale fixed access markets.

10.42 In response to Virgin’s call for further guidance as to what is meant by ‘fair and reasonable’ in the context of either charges for other BT wholesale products and services (i.e. other than those wholesale inputs for which we have decided to impose specific pricing remedies e.g. charges controls for LLU and WLR) or products and services which are yet to exist, we do not consider that further guidance is necessary or appropriate. This is because we consider that the application of this requirement is fairly limited (given that most services within these markets have a specific pricing remedy imposed) and that its meaning may vary depending on the particular circumstances of the service to which it applies. For these reasons, we do not

427 With regard also to ex post competition law remedies.
428 As noted above, we intend to publish a further consultation on the VULA margin.
consider it would be appropriate to provide guidance on a general approach to ‘fair and reasonable’.

10.43 We consider that it is appropriate for this SMP condition to include the power for Ofcom to make directions in order that we can secure the supply of services and, where appropriate, fairness and reasonableness in the terms and conditions (and, as discussed above, in certain circumstances also charges) for providing third parties with network access. The condition includes a requirement for the dominant provider to comply with any such direction(s), so any contravention of a direction would constitute a contravention of the condition itself and would therefore be subject to enforcement action under sections 94-104 of the CA03.

10.44 The SMP conditions for BT in each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets outside the Hull Area also include provision for the directions of 20 March 2008 relating to quality of service to apply for the forward look period of this market review. This is set out in more detail in our discussion regarding the adequacy of existing SLAs and SLGs below.

10.45 For the avoidance of doubt, the provisions in the existing SMP services conditions AAA1(a).4 in respect of WFAEL and AAA1(a).4 in respect of wholesale ISDN2 that BT’s Use of Cancel Other Direction dated 28 July 2005 which provide that it shall continue to have force are no longer applicable. We refer to Ofcom’s 2009 statement on protecting consumers from mis-selling in which we notified the withdrawal of the 2005 Cancel Other Direction and imposed General Condition 24 imposing requirements on CPs with regard to sales and marketing of fixed line telephony services in the circumstances set out in the condition (including the circumstances in which ‘Cancel Other’ may be applied). We have therefore removed these existing provisions from the requirement to provide network access condition set out in Annex 29.

The adequacy of existing SLAs and SLGs

10.46 Having considered stakeholder responses on the adequacy of existing SLAs and SLGs, we continue to consider that it would not be appropriate to modify the current SLAs and SLGs in respect of the services covered by these market reviews.

10.47 By requiring the terms of network access to be fair and reasonable (which include SLAs and SLGs) we are seeking to ensure that third party CPs are able to use these network access provisions to provide competing downstream services. In the context of existing SLAs and SLGs, given the existing terms in place, we do not consider it necessary to further intervene by setting these terms. We set out more detail below.

10.48 In relation to the repair SLAs for WLR and MPF, we note that the existing SLAs reflect the contractual repair timescales for each of BT’s repair care levels, namely

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431 See paragraph 10.48, Ofcom, Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - Consultation on the proposed markets, market power determinations and remedies, 3 July 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/summary/fixed-access-markets.pdf.
care level 1 for WLR (repair by day of reporting plus 2 days) and care level 2 for MPF (repair by day of reporting plus 1 day). We therefore consider that we have no evidence to suggest that CPs or consumers expected timescales different to these such that directing changes to the current SLA target for repairs would be appropriate.

10.49 With regard to the SLA for First Available Date (‘FAD’) for an appointment for provisioning, we note that the evidence demonstrates that, when given the choice, consumers and businesses preferred to wait less than 10 days for provisioning.\textsuperscript{432} However, we note that there is an additional cost to reducing the 12-day SLA but that consumers and businesses appear to show low willingness to pay for this and do not consider reducing the timescale between ordering and installing a line to be a priority. We also note that installations/engineer visits are only required in the minority of cases.

10.50 This is reinforced by the fact that there is no common position amongst stakeholder responses as to whether the SLA for provisioning appointment availability should remain at 12 days or be substantially reduced. Calls for shorter lead times appear to reflect the different priorities and objectives of the various CP stakeholders rather than providing clear evidence that a reduction is warranted.

10.51 Thus while we accept that delays in provisioning have the potential to affect competition for example by discouraging end-users from switching provider\textsuperscript{433}, we do not consider that there is clear evidence that the absence of an SLA for provisioning in less than 12 days gives rise to a competition concern. Consequently, we do not consider\textsuperscript{434} that it is appropriate for us to intervene by way of further regulation to reduce the lead time in the current SLA for provisioning appointments. Rather, our priority in this market review period is to ensure that Openreach is properly incentivised and resourced to meet its existing obligations. For these reasons, we will not seek to direct BT to amend the SLA for FAD for provisioning as the FCS and Sky suggested.

10.52 We have concluded it is appropriate to require BT to offer an SLA for FAD for provisioning appointments for GEA (BT’s VULA product). Further detail is set out in paragraph 10.253 to 10.255.

10.53 In relation to the levels of compensation for missed SLAs for which Openreach provides in its contractual agreements (i.e. the level of the SLGs), we note that, in response to the 2012 FAMR Call for Inputs, CPs raised two significant concerns about the SLGs: first, that they were not fully compensated for the losses they incur as a result of Openreach’s failure to meet its SLA commitments; and second, that the level of payments is too low to create a meaningful incentive for Openreach to meet its commitments.

\textsuperscript{432} Paragraphs A30.117-A30.121 and A30.128 in Annex 30.
\textsuperscript{433} Paragraphs A9.96 and A9.103-A9.104, Ofcom, Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - Consultation on the proposed markets, market power determinations and remedies, 3 July 2013, \texttt{http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/annexes/FAMR_Consultation_annexes.pdf}.
\textsuperscript{434} Paragraphs 10.51-10.52, Ofcom, Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - Consultation on the proposed markets, market power determinations and remedies, 3 July 2013, \texttt{http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/summary/fixed-access-markets.pdf}.
10.54 We have no evidence that the existing SLGs are not commensurate with CP losses.435

10.55 As to the effectiveness of the SLGs as a means to incentivise BT to meet its SLA commitments at their current levels and without any other mechanisms for incentivising delivery against SLAs, we consider that the SLGs alone are unlikely to be effective as the quantum of the payments was a very small percentage of total costs. It is our view that increasing the SLGs to a level where they alone are sufficient to incentivise BT to improve its performance would be likely to raise the payments substantially above compensatory levels and would, in effect, act solely to ‘penalise’ BT for the breach of an SLA, which is unlikely to be enforceable as a matter of English contract law. We are also concerned that such an approach could give rise to the potential for “gaming” the system, by both BT and CPs.

10.56 Equally, we do not consider that we need to explicitly prohibit “punitive” SLGs as suggested by BT. BT has not provided evidence of any such SLG while it is our view that SLG’s set through commercial negotiations between BT and its customers are unlikely to be punitive as against BT.

10.57 We continue to believe that the 2008 SLG Statement is appropriate and therefore, consistent with this position, the legal instrument (Annex 29) provides for the 2008 SLG directions for LLU, WLR, ISDN30 and ISDN2, and continue to apply (until otherwise modified or withdrawn).

10.58 We also accept that stakeholders have concerns about the appropriateness of the precise terms of existing SLAs and SLGs and about the contract negotiation process. We are publishing principles intended to improve the conduct of industry negotiations, to help facilitate industry-negotiated improvements to existing SLAs and SLGs and to encourage the negotiation of new SLAs and SLGs as necessary and we would encourage stakeholders to raise those issues with Openreach through the OTA2 process. We understand that the industry has already begun discussions concerning the priorities for discussion through the OTA2 process and welcome this. We consider that this type of open industry negotiations is a more appropriate process than a market review through which new SLAs and SLGs are identified and the relative targets and compensation levels determined. Negotiations allow a wide range of issues to be considered in this determination including commitments from Openreach customers on their practices. We consider that this approach is consistent with our intention of making BT’s existing commitments more transparent while letting commercial negotiations specify in detail the terms under which BT offers its services.

10.59 As set out above, we are requiring network access to be provided on fair and reasonable terms, conditions and charges, which includes SLA and SLG terms and conditions. Therefore, if stakeholders consider that BT is not complying with this requirement and they cannot resolve the issues via the OTA2 process, then they are able to refer a dispute to Ofcom.

435 We note that in the Dispute relating to whether Openreach offered MPF New Provide to TalkTalk Telecom Group PLC on fair and reasonable terms and conditions, TalkTalk argued that the current level of SLG payments relating to MPF new provides was not fair and reasonable on the basis that it did not represent a pre-estimate of the loss incurred by a CP where BT failed to meet the corresponding SLA. In our Determination we considered, on the evidence provided, that BT’s SLG sat within a fair and reasonable range. See: http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_01098/.
10.60 We now deal with the specific points raised by stakeholders. With regard to the Webb Henderson report on the adequacy of the SLA/SLG regime in the UK, in our view, the outcomes that the Webb Henderson report sets out as desirable are consistent with the outcomes that we intend our wider service quality measures to help industry to achieve. For example, we consider that our imposition of minimum standards, with the link to financial penalties, constitutes a credible threat of regulatory intervention in response to consistent poor performance, and the minimum standard’s limited allowance for MBORCs is likely to help mitigate the risk that Openreach could exploit contractual exemptions in SLAs and SLGs inappropriately. Furthermore, we have strengthened SLA and SLG requirements and developed a comprehensive set of KPIs for industry and public visibility of performance.

10.61 Below we set out our responses to the three areas where Sky and TalkTalk requested further guidance.

10.62 With regard to Sky and TalkTalk’s request for guidance on the methodology to be used for estimating CP losses where these are relevant to SLGs, we consider it likely that the most appropriate method would depend on the nature of the service being provided. While it is difficult to set out such principles in advance, the 2008 SLG Statement set out how it is possible to use various methodologies to calculate the losses of CPs due to different kinds of failure (for example on the basis of compensation paid by CPs to their end-users or the additional costs of customer service resulting from the failure). Should a CP consider that BT offers SLGs that are not fair and reasonable, it may choose to pursue Ofcom’s dispute resolution process.

10.63 Sky and TalkTalk have requested guidance as to if and how BT can link SLAs and SLGs to CP demand forecasts. In our Determination concerning whether Openreach offered MPF New Provide to TalkTalk on fair and reasonable terms (‘the MPF New Provide Determination’), we concluded that the terms and conditions offered by Openreach for MPF New Provide could include a forecasting requirement and still be considered fair and reasonable. 436

10.64 We also note that the OTA2 Update of September 2011 reports the agreement of all parties to the variable elements that should make up an SLG, including, from April 2012, a link to forecast accuracy. 437 We consider that the principle of linking SLAs and SLGs to forecasts has been established in SLA and SLG contracts and that the detail of such links is best left to industry negotiation through the OTA2 process.

10.65 With regard to Sky’s further proposal that Ofcom reiterate in new guidance its conclusion in the 2008 SLG Statement that Openreach should not require a contractual link between forecasting and SLG payments, we note that we reached this conclusion because we did not consider that such a requirement would be proportionate for all CPs, particularly smaller CPs. In the statement we requested that the OTA2 lead discussions between Openreach and CPs to establish a robust and meaningful forecasting process.438

436 Paragraphs 3.183 and 3.193, Ofcom, CW/01098/12/12: Dispute relating to whether Openreach offered MPF New Provide to TalkTalk Telecom Group PLC on fair and reasonable terms and conditions, http://stakeholders.ofcom.org.uk/binaries/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_01098/Dispute_between_TalkTalk_Te1.pdf.


10.66 We note Sky's view that the link between demand forecasts and the provisioning appointment lead time SLG requires an unreasonable degree of forecast accuracy. In the MPF New Provide Determination, we upheld our initial view that there was not sufficient evidence to show that this level of forecast accuracy was not fair and reasonable. In the absence of further evidence, this remains our view.

10.67 With regard to Sky's view that there is no evidence that Openreach uses demand forecasts to improve service quality, in the MPF New Provide Determination we set out our view that accurate forecasting should be used to aid resource planning in advance of orders being placed. We also concluded that Openreach is incentivised to use forecasts effectively, as doing so would improve Openreach's ability to accurately predict resource requirements and, when Openreach is subject to an SLA regime, help it avoid paying SLGs.

10.68 With regard to Sky and TalkTalk's requests for guidance in relation to MBORC declarations, we note that this matter is the subject of wider industry discussion. However, we have sought to construct the new minimum standards (discussed in Section 11) such that they cannot be readily gamed via MBORC declarations. We are also setting out new KPIs to monitor MBORC declarations more closely, so that we are able to observe whether there are changes in Openreach's behaviour with respect to MBORC.

10.69 In respect of Sky's request to base CP forecasting set out in the current Copper Appointment Availability SLA on the 10 GM regions we note that this is currently part of industry negotiations which we consider is the appropriate forum for considering this issue.

10.70 We note Verizon's comments on the importance of monitoring Openreach's service quality performance and, in particular, about Ethernet quality of service. We have set out our amended requirements for Openreach to publish KPIs on service quality in Section 11. We have also begun investigating Ethernet QoS within our Business Connectivity Market Review. We have published a Call for Inputs which closes on 27 May and will consider Verizon's points as appropriate along with other stakeholder responses.

10.71 With regard to Vodafone's comments on the need for differentiated service quality requirements for businesses vis-à-vis residential consumers, we do not consider that there is sufficient clarity as to the specific needs of business CPs for this to be addressed through this review.

10.72 We note the work of the Business Market Service Improvement Programme ('BMSIP') which is working on initiatives specifically for the business market. We will monitor the progress of the BMSIP with the aim of supporting this process. We will consider the need for further intervention in future if necessary, including considering whether we would need to direct the reporting of additional business-related KPIs.

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439 Paragraph 3.184, Ofcom, CW/01098/12/12: Dispute relating to whether Openreach offered MPF New Provide to TalkTalk Telecom Group PLC on fair and reasonable terms and conditions, http://stakeholders.ofcom.org.uk/binaries/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_01098/Dispute_between_TalkTalk_Te1.pdf.

We would also encourage the use of the OTA2 negotiation process to consider any additional SLAs and SLGs that might be appropriate.

10.73 We also note that our imposition of minimum standards, set out in Section 11, is likely to reduce the number of instances where Openreach could potentially trade off resourcing decisions against SLG payments and overall performance should thus improve.

Decisions on requirement to provide network access on reasonable request

10.74 We have therefore decided that a general network access condition should apply to BT and KCOM in the following markets as shown in Table 10.5:

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>General network access obligations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA</td>
<td>Yes including fair and reasonable charges where no other pricing obligation applies</td>
<td>Yes including fair and reasonable charges</td>
</tr>
<tr>
<td>WFAEL</td>
<td>Yes including fair and reasonable charges where no other pricing obligation applies</td>
<td>Yes including fair and reasonable charges</td>
</tr>
<tr>
<td>ISDN30</td>
<td>Yes including fair and reasonable charges where no other pricing obligation applies</td>
<td>Yes including fair and reasonable charges</td>
</tr>
<tr>
<td>ISDN2</td>
<td>Yes including fair and reasonable charges where no other pricing obligation applies</td>
<td>Yes including fair and reasonable charges</td>
</tr>
</tbody>
</table>

Legal tests

10.75 For the reasons set out below, we are satisfied that the conditions for BT in respect of each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the UK excluding the Hull Area and for KCOM in the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets for the Hull Area (respectively in Annex 29) meet the various tests set out in the CA03.

10.76 Section 87(3) of the CA03 authorises Ofcom to set SMP services conditions requiring the dominant provider to provide network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions. Section 87(9) of the CA03 also authorises SMP services conditions imposing on the dominant provider such rules as they may make in relation to matters connected with the provision of network access about the recovery of costs and cost orientation, subject to the conditions of section 88 of the CA03 being satisfied.

10.77 In imposing these conditions, we have taken into account the factors set out in section 87(4) of the CA03. When considering the imposition of such conditions in a particular case, we must take into account the following six factors set out in section 87(4):

- the technical and economic viability (including the viability of other network access products, whether provided by the dominant provider or another person), having
regard to the state of market development, of installing and using facilities that would make the network access unnecessary;

- the feasibility of the provision of network access;
- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is being imposed (taking account of any public investment made);
- the need to secure effective competition (including, where it appears to Ofcom to be appropriate, economically efficient infrastructure based competition) in the long term;
- any rights to intellectual property that are relevant to the proposal; and
- the desirability of securing that electronic communications services are provided that are available throughout the Member States.

10.78 In reaching our decision that BT and KCOM should be subject to a requirement to provide network access on reasonable request, we have taken all of the above six factors into account. In particular, having considered the economic viability of building access networks to achieve ubiquitous coverage that would make the provision of network access unnecessary, we consider that the SMP condition is required to secure effective competition, including economically efficient infrastructure based competition, in the long term in each of the wholesale access markets in this review. The requirements for BT and KCOM to meet only reasonable network access requests also ensure that due account is taken of the feasibility of providing the network access, and of the investment made by BT and KCOM initially in providing the network.

10.79 We are also required to ensure that the condition satisfies the tests set out in section 88 of the CA03 as the requirement places controls on network access pricing, insofar as charges are required to be fair and reasonable. Section 88(1) of the CA03 requires that Ofcom must not impose pricing conditions unless it appears from the market analysis carried out for the purpose of setting that condition that there is a relevant risk of adverse effects arising from price distortion. We have discussed above that we consider that, in the absence of price regulation requiring prices to be ‘fair and reasonable’, BT and KCOM may price excessively.

10.80 Section 88(1)(b) of the CA03 requires that the pricing condition should be appropriate for the purposes of promoting efficiency, promoting sustainable competition and conferring the greatest possible benefits on the end-users of public electronic communications services.

10.81 We consider that fair and reasonable charges will prevent BT and KCOM from charging excessively high prices (in the case of BT, where we do not impose another form of pricing obligation). In this way, this condition supports the aim of improved efficiency.

10.82 We also consider that the provision of network access on fair and reasonable terms will promote sustainable competition by ensuring that other CPs can effectively compete at the retail level. We consider this to be the appropriate approach for the purposes of conferring the greatest benefits on end-users of the services.
10.83 We are also required, under Section 88(2) of the CA03, to consider BT’s and KCOM’s investment. We believe that fair and reasonable charges will allow BT’s and KCOM’s costs to be taken into account and will also provide for common cost recovery. This condition is therefore an appropriate basis upon which to control BT’s and KCOM’s prices.

10.84 We have considered our duties under section 3 and all the Community requirements set out in section 4 of the CA03. In particular, in each of the wholesale access markets the condition is aimed at promoting competition and securing efficiency and sustainable competition for the maximum benefit of consumers by facilitating the development of competition in downstream markets.

10.85 Section 47(2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The condition is:

- objectively justifiable, in that in each of the wholesale access markets it facilitates and encourages access to BT’s and KCOM’s networks and therefore promotes competition to the benefit of consumers;

- not unduly discriminatory, in that it is imposed on both BT and KCOM and no other CP has been found to hold a position of SMP in these markets in the UK excluding the Hull Area and the Hull Area respectively;

- proportionate, in that it is targeted at addressing the market power that we find BT and KCOM hold in these markets and does not require them to provide access if it is not technically feasible or reasonable; and

- transparent, in that the condition is clear in its intention to ensure that BT and KCOM provide access to their networks in order to facilitate effective competition.

10.86 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the CA03.

Request for new forms of network access

Current remedies

10.87 BT and KCOM are currently required to, amongst other things, publish and follow a process by which they will address requests for new forms of network access (its SoR process) in the WLA and WFAEL markets. BT, but not KCOM, is also subject to a new network access obligation in both the wholesale ISDN30 and wholesale ISDN2 markets. Table 10.6 details the relevant current SMP conditions.

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Existing SMP conditions</th>
<th>KCOM (in the Hull Area only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA</td>
<td>BT (in the UK excluding the Hull Area)</td>
<td>SMP condition FAA2</td>
</tr>
<tr>
<td>WFAEL</td>
<td>SMP condition AAAA1(b)</td>
<td>SMP condition AAAB1(b)</td>
</tr>
<tr>
<td>ISDN30</td>
<td>SMP condition AAA(IS)1(b)</td>
<td></td>
</tr>
<tr>
<td>ISDN2</td>
<td>SMP condition AAA1(b)</td>
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</tbody>
</table>
Aim and effect of regulation

10.88 Vertically integrated CPs have the ability to favour their own downstream business over third party CPs by differentiating on price or terms and conditions. One form of discrimination is in relation to the handling of requests for new forms of network access. This has the potential to distort competition at the retail level by placing third party CPs at a disadvantage compared with the downstream retail business of the vertically integrated operator in terms of their ability to introduce new services to meet their customers’ needs and in terms of their ability to offer innovative services in order to compete more effectively.

10.89 Therefore, the aim of this regulation is to support access seekers in ensuring that there is a fair, reasonable and transparent process for assessing reasonable requests for new forms of network access. To make such a request, the CP must provide the dominant provider with an SoR against which the reasonableness of the request can be assessed.

10.90 As our analysis in the preceding sections shows, in the absence of such a requirement, BT and KCOM, in each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets, have an incentive and ability to refuse to provide new forms of network access at the wholesale level, thereby favouring their own retail operations with the effect of hindering sustainable competition in the corresponding downstream markets, ultimately against the interests of end-users.

Proposals as set out in the July 2013 FAMR Consultation

10.91 We proposed that new network access conditions should apply to BT and KCOM in the following markets as shown in Table 10.7 below:

Table 10.7: Proposed new network access obligations

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Proposed new network access conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA</td>
<td>BT (in the UK excluding the Hull Area)</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>KCOM (in the Hull Area only)</td>
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<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>WFAEL</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN30</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN2</td>
<td>Yes</td>
</tr>
</tbody>
</table>

10.92 In the July 2013 FAMR Consultation we asked:

10.3 Do you agree with our proposals regarding requirements on BT and KCOM in relation to handling requests for new network access? Please provide reasons in support of your views.

Stakeholder responses to the July 2013 FAMR Consultation

10.93 Virgin⁴⁴¹, Vodafone⁴⁴², Verizon⁴⁴³ and KCOM⁴⁴⁴ all agreed in principle with the proposals.

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10.94 Vodafone considered that it was essential that BT was responsive to requests for network access, the process for which continued to result in conflict between CPs and BT. It noted that, as a result, CPs were currently reviewing industry interaction between stakeholders and the OTA2. Vodafone expressed hope that Ofcom would support any proposals arising from this process.445

10.95 Further to its general view on the value of general remedies in relation to wholesale ISDN2 and wholesale ISDN30, KCOM welcomed our proposal not to impose on it new network access obligations in these markets. It noted that the prospect of a new ISDN product being requested was highly unlikely and therefore that the remedy was redundant.

10.96 KCOM confirmed that it was “entirely comfortable” with our proposal to extend the condition to include a requirement to inform the access seeker of any reason why a request is refused and noted that it already commits to providing full details in its New Services Manual.

10.97 EE appreciated the clarity provided on this issue in the consultation, but believed that Ofcom should issue updated Access Guidelines setting out Ofcom’s current views.446

10.98 BT, however, disagreed with our proposal to impose a new transparency requirement in the SMP condition, arguing that447:

- Openreach was already transparent including in relation to SoRs that are rejected and the rationale for rejection;

- transparency was not the primary issue underlying differences of opinion between Openreach and CPs, which concerned commercial viability in most cases and/or technical feasibility;

- protection of commercial confidentiality was important and that the proposed provision could be used by CPs to force disclosure of confidential information (whether BT’s or third parties’). BT disagreed with our suggestion of using a third party such as the OTA2 or consultants to address confidentiality concerns as it considered that this would give rise to a number of practical and non-trivial issues; and

- improvements to the SoR process, including transparency around the reasons for SoR rejection, were best agreed through industry discussion.

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444 P.7, KCOM response to July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/KCOM.pdf
446 P.7, EE response to July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf
10.99 Sky\textsuperscript{448} considered that Ofcom should prescribe the SoR process which BT must follow, and suggested a number of aspects that the process should include, such as:

- the provision of fixed timescales which must not be missed or extended without valid justification;
- industry review of proposed SoR rejections by BT where appropriate; and
- reference to the OTA2 for adjudication when there was widespread dissatisfaction with a BT SoR.

10.100 Sky supported the suggestion that EE made in response to the 2012 FAMR Call for Inputs that BT’s adherence should be actively monitored by Ofcom, with failures to meet the process sanctioned.\textsuperscript{449} Sky suggested that it was particularly important to ensure the SoR process was working properly as it considered that part of Ofcom’s justification for not imposing more stringent remedies on BT in a number of areas is that CPs could raise a request with BT through the SoR process.\textsuperscript{450}

10.101 TalkTalk set out why it considered the product development process to be dysfunctional and not fit for purpose and noted that, while making its comments in relation to this review of fixed access markets, its comments equally applied to other markets.\textsuperscript{451}

10.102 TalkTalk argued that Openreach accepted or rejected product developments on the basis of what was best for Openreach/BT. In many cases there was a misalignment between Openreach’s interests and CPs’ interests and therefore developments which could deliver substantial consumer benefits were delayed or refused by BT.

10.103 TalkTalk considered that Openreach rejected requests that were against its interests because there was little incentive or leverage for them to do otherwise. Even if a CP was successful in disputing a refused request for new network access, the worst outcome for Openreach was that it would have to develop the product going forward.

10.104 TalkTalk set out a number of ideas on how the process could be improved which we summarise as follows:\textsuperscript{452}:

- basis for assessing SoRs – Ofcom should consider clear guidance that the basis for assessing ‘reasonable requests’ should be based on an assessment of consumers’ interests;

\textsuperscript{450} Paragraphs 2.31-2.36, TalkTalk response to July 2013 FAMR Consultation – other issues, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/TalkTalk_Other_Issues.pdf.
obligation to conduct proper analysis – the obligation to meet 'reasonable requests' should include an explicit obligation to conduct a proper analysis to address Openreach's incentive to frustrate the process;

- transparency – there should be a clear obligation of transparency and candour on BT to address its incentive to be unconstructive and to delay/avoid developing products that are not in BT’s interests. TalkTalk noted that, absent an obligation on BT to be clear as to the reasons for rejecting an SoR, it was difficult for access seekers to clearly articulate a dispute with Ofcom; and,

- timeliness – address the causes for slow decision making in product development (intentional or otherwise).

10.105 TalkTalk considered that Ofcom should set guidelines or SMP conditions that required BT to behave in a better and more constructive manner. Further, the effectiveness of any such remedies would depend on whether BT had an incentive to comply (i.e. where BT was commercially better off by complying than not complying). TalkTalk therefore argued that Ofcom should consider penalties (restitution and punitive) to complement clear and unambiguous guidance. TalkTalk also suggested that the OTA2 could provide an independent view on whether certain SoRs should be accepted or not (i.e. an arbitration role in addition to their current role of facilitating the current process).453

10.106 [...] broadly agreed with Ofcom's proposals, and expressed support for the positions set out by EE454 and TalkTalk455 in their respective responses to the 2012 FAMR Call for Inputs (see paragraphs 10.61 to 10.63 of July 2013 FAMR Consultation). [...] stated that its own experience of the SoR process varied and it was concerned that BT had a one-sided negotiating position. [...] therefore suggested that Ofcom considered using its powers under Section 185A of the CA03 to remedy this. [...] noted Ofcom’s position in the consultation that, in circumstances where third parties considered that BT was not complying with these provisions, it was a matter for them to consider making appropriate representations to Ofcom in accordance with Ofcom’s Enforcement Guidelines456 and Dispute Resolution Guidelines.457 However, [...] suggested that the threshold for bringing such a dispute could be a barrier, especially for many smaller CPs.458

457 [...]
10.107 The FCS remained concerned that Openreach is able to reject an SoR on the basis that it is not commercially viable.\footnote{FCS response to July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Federation_of_Communication_Services_Ltd.pdf.}

Reasoning and decisions on requests for new network access

10.108 Section 87(3) of the CA03 authorises Ofcom to set SMP services conditions requiring the dominant provider to provide network access as it may, from time to time, direct. These conditions may, pursuant to section 87(5) of the CA03, include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within the periods and at the times required by or under the conditions.

10.109 We have decided to impose a condition regarding the process by which BT and KCOM will address requests for new forms of network access (the SoR process) and that this condition should continue to be imposed on BT in each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the UK excluding the Hull Area. An equivalent condition is imposed on KCOM in respect of the WLA and WFAEL markets in the Hull Area only. We consider that this requirement remains an appropriate and proportionate \textit{ex ante} measure to complement the general network access requirement discussed in the preceding sub-section.

10.110 In light of our analyses of both wholesale ISDN markets in the Hull Area (set out in Sections 4 and 5), we consider that imposing a new network access remedy on KCOM in these legacy markets would have little (if any) effect insofar as we consider that there is little prospect of third party CP demand for new forms of wholesale ISDN2 or ISDN30 network access within the Hull Area over the period of this review. We therefore do not consider it appropriate to impose a new network access remedy on KCOM in these markets.

Transparency of reasons for rejecting SoRs

10.111 The current Openreach SoR guidelines\footnote{Openreach, \textit{How to raise a Statement of Requirement for Openreach Products}, Issue 7, 18 April 2013.}, which may only be changed by agreement between BT and industry and which BT must apply when dealing with a request for new network access, state that Openreach must give its reasons for rejecting such requests.

10.112 We consider that BT should be clear and transparent as to its reasons for rejecting requests for new network access and that it should make every reasonable effort in this regard. We believe that such transparency is important in securing fairness and reasonableness in the way in which requests for new network access are responded to. Moreover, we consider that transparency of BT’s decisions is in the interests of both BT and its competitors in avoiding unnecessary recourse to our dispute resolution process.

10.113 We recognise that the protection of commercially confidential information is a legitimate concern and note the points made by BT in this regard. We recognise (as we did in the July 2013 FAMR Consultation) that commercial confidentiality is a legitimate concern and, in certain circumstances, that it may not be reasonably
possible (or indeed appropriate) to disclose confidential data as part of a dominant provider’s explanation of its reasons for rejecting an SoR in a manner which is clear and transparent. However, we consider that such legitimate concerns over commercial confidentiality should not diminish the principle that dominant providers should make every reasonable effort to be clear and transparent as to their reasons for rejecting a request for new network access. In this regard, whereas we note that the use of a mutually acceptable third party (the OTA2 or suitable consultant) with access to certain confidential data may introduce some practical issues which require agreement and resolution between the dominant provider and relevant access seeker(s), we consider that this is not a reason, in itself, for a dominant provider to refuse to explore such approaches, where appropriate and proportionate, in the pursuit of satisfying the principle of transparency of the dominant provider’s decisions.

10.114 We consider that the inclusion of a principle as regards transparency of reasons for rejecting a request for new network access is equally appropriate and applicable in the case of KCOM. In this regard we note that KCOM was “entirely comfortable” with this requirement as it already commits to this in its published SoR process.461

10.115 For the reasons set out above, we consider that the new network access SMP condition should require that the guidelines that BT and KCOM are required to publish and follow must meet the principle that the reasons for the rejection of any request should be clear and transparent.

Wider concerns regarding the handling of requests for new network access

10.116 We note that several stakeholders expressed a number of wider concerns that the BT SoR process is not working effectively, variously arguing that Ofcom should set out clear guidance/rules or a more prescriptive process for how BT should assess and conduct itself with regard to requests for new network access and/or should engage more actively in monitoring BT’s compliance.

10.117 We note, as TalkTalk did in its response, that these wider concerns are not limited to the development of new forms of network access in the markets we are reviewing here. Rather, such concerns apply to the same or similar new network access conditions and product development processes in other regulated markets – such as the markets for leased lines assessed in our Business Connectivity Market Review. We therefore consider that these issues may be best assessed in a wider context.

10.118 While we do not consider that any of these concerns suggest we should not impose a new network access condition in the form proposed in our July 2013 FAMR Consultation, we have given consideration to whether it is appropriate to set up a separate project to look at the new network access conditions and the BT SoR/product development process across all the relevant regulated markets. We have decided to closely monitor the SoR process over the next 12 months, which will enable us to gain a better view of the concerns that stakeholders have raised. During this period we are likely to collect information on SoRs as they progress through the process and attend industry working groups where they are discussed. At the end of this period, we will decide whether it is appropriate to initiate a separate SoR project.

The representations stakeholders have made in response to the FAMR will form part of the initial base of information that we collect over the next 12 months.

Decisions on requirement to provide new network access on reasonable request

10.119 We have decided that new network access conditions should apply to BT and KCOM in the following markets as shown in Table 10.8 below:

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>New network access conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BT (in the UK excluding the Hull Area)</td>
</tr>
<tr>
<td>WLA</td>
<td>Yes</td>
</tr>
<tr>
<td>WFAEL</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN30</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN2</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Legal tests

10.120 For the reasons set out below, we are satisfied that the conditions for BT in respect of each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the UK excluding the Hull Area and for KCOM in the WLA and WFAEL markets for the Hull Area (respectively in Annex 29), meet the various tests set out in the CA03.

10.121 Section 87(3) of the CA03 authorises the setting of SMP services conditions in relation to the provision of network services. We consider that the condition will assist in securing fairness and reasonableness in the way in which requests for network access are made and responded to, as provided for under section 87(5)(a).

10.122 In reaching our decision, we have also taken into account the factors set out in section 87(4) of the CA03. In particular, having considered the economic viability of building access networks to achieve ubiquitous coverage that would make the provision of network access unnecessary, we consider that the SMP condition is required to secure effective competition, including economically efficient infrastructure-based competition, in the long term in each of the wholesale access markets.

10.123 We have considered our duties under section 3 of the CA03. We consider that, in ensuring access seekers are able to make requests for new forms of network access based on an agreed SoR process, the condition would in particular further the interests of consumers in relevant markets by the promotion of competition.

10.124 We have considered the Community requirements as set out in section 4 of the CA03. We consider that the condition will promote competition in relation to the provision of electronic communications networks and encourage the provision of network access for the purpose of securing efficiency and sustainable competition in the markets for electronic communications networks and services.

10.125 We also consider that the condition meets the criteria set out in section 47(2) of the CA03. The condition is:

- objectively justifiable, in that its purpose is to support the provision of access to BT’s and KCOM’s networks and non-discrimination obligations in the processing of requests for new network access;
• not unduly discriminatory, in that it applies to both BT and KCOM, which are the only CPs which we have found have SMP in the relevant markets in the UK excluding the Hull Area and the Hull Area respectively, and that it is appropriate to distinguish between BT and KCOM in relation to wholesale ISDN30 and wholesale ISDN2;

• proportionate, in that it sets out the high level principles that the process for requests for new forms of network access should conform to and thus encourages competition at the retail level, while allowing the detail of the process to be agreed between the dominant provider and industry; and

• transparent, in that it is clear the intention is to support the provision of access to BT's and KCOM’s networks in order to facilitate competition.

10.126 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the CA03.

Requirement not to unduly discriminate and Equivalence of Inputs

Current remedies

10.127 BT and KCOM are currently prohibited from unduly discriminating in relation to the provision of network access in each of the wholesale fixed access markets. BT is also subject to a specific requirement to provide VULA on an EOI basis. Table 10.9 details the relevant current SMP conditions.

Table 10.9: Current SMP conditions concerning the requirement not to unduly discriminate

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Existing SMP conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT (in the UK excluding the Hull Area)</td>
<td>KCOM (in the Hull Area only)</td>
</tr>
<tr>
<td>WLA</td>
<td>SMP condition FAA3</td>
</tr>
<tr>
<td></td>
<td>SMP condition FAA11.3 (EOI for VULA)</td>
</tr>
<tr>
<td></td>
<td>SMP condition FBB3</td>
</tr>
<tr>
<td>WFAEL</td>
<td>SMP condition AAA2</td>
</tr>
<tr>
<td>ISDN30</td>
<td>SMP condition AAA(IS)2</td>
</tr>
<tr>
<td>ISDN2</td>
<td>SMP condition AAB(IS)2</td>
</tr>
</tbody>
</table>

Aim and effect of regulation

10.128 Article 8(1) of the 2002 EC Directive on access to, and interconnection of, electronic communications networks and associated facilities (‘the Access Directive’) requires Member States to ensure that national regulatory authorities are empowered to impose certain obligations where an operator is designated as having SMP. These include, under Article 10 of the Access Directive, obligations of non-discrimination. Article 10(1) provides that a national regulatory authority may: “impose obligations of non-discrimination, in relation to interconnection and/or access”. Article 10(2) further provides:

“[o]bligations of non-discrimination shall ensure, in particular, that the operator applies equivalent conditions in equivalent circumstances to other undertakings providing equivalent services, and provides services and information to others under the same conditions and of the same quality as it provides for its own services, or those of its subsidiaries or partners”.

10.129 Article 10 of the Access Directive is implemented into UK law by section 87(6)(a) of the CA03 which gives us a power to impose “a condition requiring the dominant provider not to discriminate unduly against particular persons, or against a particular description of persons, in relation to matters connected with network access to the relevant network or with the availability of the relevant facilities”. We consider any conditions imposed pursuant to this power require equivalence as per Article 10(2).

10.130 A non-discrimination obligation is intended as a complementary remedy to the network access obligation, principally to prevent the dominant provider from discriminating in favour of its own downstream divisions and to ensure that competing providers are placed in an equivalent position. Without such an obligation, the dominant provider is incentivised to provide the requested wholesale network access service on terms and conditions that discriminate in favour of its own downstream divisions.

10.131 Non-discrimination can have different forms of implementation. A strict form of non-discrimination – i.e. a complete prohibition of discrimination – would result in the SMP operator providing exactly the same products and services to all CPs (including its own downstream divisions) on the same timescales, terms and conditions (including price and service levels), by means of the same systems and processes and by providing the same information. Essentially, the inputs available to all CPs (including the SMP CPs’ own downstream divisions) would be provided on a truly equivalent basis, an arrangement which has become known as EOI. An EOI obligation removes any degree of discretion accorded to the nature of the conduct.

10.132 On the other hand, a less strict interpretation of non-discrimination may allow for flexibility and result in a more practical and cost-effective implementation of wholesale inputs. For example, equivalence of outputs (‘EOO’) implies that the wholesale products that BT offers to its wholesale customers should be comparable to those that it offers to its own retail activities, but the product and processes need not be exactly the same so long as any differences are not material. However, a no undue discrimination remedy would, by its very nature (taking into account our Discrimination Guidelines and its application to a vertically integrated provider with SMP) allow for certain discriminatory conduct as compliance with that obligation needs to establish in particular whether the discrimination in question is undue.

10.133 Article 10 of the Access Directive, as implemented by section 87(6)(a) of the CA03, provides a basis for imposing both EOI and a less strict interpretation of non-discrimination which prevents undue discrimination.

10.134 As our analysis in the preceding sections shows, in the absence of such a requirement, BT and KCOM, in each of the WLA, WFAEL, wholesale ISDN30 and

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wholesale ISDN2 markets, have an incentive and ability to favour their own retail operations with the effect of hindering sustainable competition in the corresponding downstream markets, ultimately against the interests of end-users.

**Proposals as set out in the July 2013 FAMR Consultation**

10.135 We proposed that BT should be subject to a requirement to provide network access on an EOI basis and that this should apply where:

- BT is currently required under a SMP services condition to do so (i.e. in respect of the VULA network access remedy in the WLA market); and
- BT currently provides network access on an EOI basis in accordance with the BT Undertakings given to Ofcom by BT pursuant to the Enterprise Act 2002.

10.136 We further proposed that BT and KCOM should be subject to a requirement not to unduly discriminate in the provision of network access.

10.137 We therefore proposed that no undue discrimination and EOI conditions should apply to BT and/or KCOM in the following markets as shown in Table 10.10 below:

**Table 10.10: Proposed no undue discrimination (NUD) and EOI obligations**

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Proposed NUD and EOI conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA</td>
<td>BT (in the UK excluding the Hull Area) KCOM (in the Hull Area only)</td>
</tr>
<tr>
<td>WFAEL</td>
<td>Yes – NUD and EOI where applicable Yes – NUD only</td>
</tr>
<tr>
<td>ISDN30</td>
<td>Yes – NUD and EOI where applicable Yes – NUD only</td>
</tr>
<tr>
<td>ISDN2</td>
<td>Yes – NUD and EOI where applicable Yes – NUD only</td>
</tr>
</tbody>
</table>

10.138 In the July 2013 FAMR Consultation we asked:

**10.4 Do you agree with our proposals regarding requirements on BT and KCOM in relation to remedying discriminatory conduct? Please provide reasons in support of your views.**

**Stakeholder responses to the July 2013 FAMR Consultation**

10.139 KCOM, Verizon, and the FCS all supported the proposals. While Virgin also supported the proposals in part, it suggested that Ofcom should ensure that, going forward, it considered the level of non-discrimination remedy on a case-by-case basis.

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468 [306]
10.140 BT contended that Ofcom should rely on the current no-undue discrimination requirement and that our proposal to impose a more onerous complete prohibition of discrimination as an SMP remedy was unjustified and disproportionate. It argued that Ofcom had not provided adequate or objective justification for its proposals and in failing to do so had not met the criteria of s47(2) of the CA03 and had failed to follow the Commission Recommendation. In particular:

- BT argued that the competition concerns were the same as we had highlighted in previous reviews and that, absent further problems or reasons, there was no justification for imposing a stricter and more onerous regulatory requirement; and

- SMP EOI is disproportionate since Ofcom had failed to demonstrate why the existing measure had proved inadequate in addressing competition concerns and that Ofcom should consider whether any lesser measure should suffice.

10.141 BT also expressed concerns that the EOI SMP obligation did not contain the same “checks and balances” found in the Undertakings. Further, BT suggested that the wording of the EOI SMP condition was not always consistent with the text used in the Undertakings and would need to be modified if Ofcom intended the EOI SMP condition to not be any more onerous than the Undertakings.

10.142 BT also suggested that, where it was subject to EOI as an SMP remedy with regards to the provision of network access, it should not also be subject to an SMP obligation not to unduly discriminate. Finally, BT expressed concerns that the draft legal instrument (Condition 4.2) did not align with Ofcom’s stated rationale for the imposition of the remedy and suggested that this should be reviewed.

10.143 While Sky considered Ofcom’s proposal to impose an SMP EOI requirement on BT was a positive step, it felt that this would have a minimal impact on CPs and consumers given that BT was already required to provide most of its wholesale products and services to its customers on an EOI basis. Sky considered that the introduction of such an SMP condition should not lead to a relaxation of the Undertakings.

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Reasoning and decisions on EOI and no undue discrimination

10.144 Section 87(6)(a) of the CA03 authorises the setting of an SMP services condition requiring the dominant provider not to discriminate unduly against particular persons, or against a particular description of persons, in relation to matters connected with the provision of network access.

10.145 We consider that it is appropriate, proportionate and justified to impose a non-discrimination obligation on each of BT and KCOM in the UK excluding the Hull Area and the Hull Area respectively. Such an obligation is required in order to address each of their ability and incentive (arising out of their SMP) to discriminate in favour of their own downstream retail operations, thereby distorting and restricting competition at the retail level. In particular, we are concerned that BT and KCOM are incentivised to provide the requested wholesale network access service, in each of the four wholesale fixed access markets in which we consider they hold a position of SMP, on terms and conditions that discriminate in favour of their own downstream divisions. For example, they might decide to charge competing providers more than the amount charged to their own downstream divisions or they might strategically provide the same services but within different delivery timescales. Both these behaviours could have an adverse effect on competition. Equally, we consider that BT and KCOM have the ability and incentive to supply products with different levels of quality – e.g. different SLAs and SLGs, providing fault repair of products on different timescales, creating new variants to fulfil the requirements of their downstream divisions, prioritising the needs of their downstream divisions in developing improvements and enhancements, and taking longer to address, or avoiding addressing, the requirements of competitors.

10.146 We explain below the form of the non-discrimination obligation we have decided to impose on each of BT and KCOM.

EOI

BT

10.147 We consider that EOI is the most effective form of non-discrimination. The concept of EOI was identified in Ofcom’s 2004-2005 Strategic Review of Telecommunications as one of our key policy principles to ensure that regulation of the telecommunication markets is effective. 477 In principle, EOI delivers many advantages over EOO. It generates better incentives on the dominant undertaking to improve the products it offers to its competitors, it increases transparency, it is easier to monitor compliance, and it would require less ongoing intervention by Ofcom. It therefore offers greater potential to address the issue of inequality of access in a sustainable fashion. However, we recognise it is costly to introduce for some existing products.

10.148 We have assessed whether it is appropriate for EOI to apply to BT in each of the wholesale fixed access markets.

10.149 This assessment considers two key factors:

• whether the importance of ensuring a level playing field in downstream markets justifies imposing EOI; and

• and whether to do so is proportionate.

The importance of ensuring a level playing field in downstream markets

10.150 All the services provided across WFAEL, wholesale ISDN2, wholesale ISDN30 and WLA markets are essential components for many downstream products and services used by business and residential consumers in particular for voice calls and broadband services (internet access, email etc). These wholesale services are essential for CPs to deliver their own services to customers, as the majority remain reliant on BT’s network in doing so.

10.151 Given the importance of these products and services, it is essential that BT is prevented from any discrimination both on a price and non-price basis in order to prevent the distortion or restriction of competition and ensure a level playing field on which other CPs can compete with BT.

10.152 In our view, the normal undue discrimination remedy would, by its very nature, allow for certain discriminatory conduct – compliance with that obligation needs to establish in particular whether the discrimination in question is undue. However, whether the conduct in question is such as to amount to a breach of the undue discrimination obligation can only be determined on a case-by-case basis.

10.153 Conversely, an EOI obligation removes any degree of discretion accorded to the nature of the conduct. The distinction between these two forms of non-discrimination is that, in the case of the former, both the ability and the incentive on the part of the SMP operator may still exist to engage in the relevant conduct – however, in the case of the latter, the ability is removed \textit{ex ante} altogether.

10.154 Further, EOI is particularly important in ensuring non-discrimination in relation to non-price terms as it requires BT’s downstream divisions to use the same systems, processes and information as its competitors in relation to the development, provision, maintenance and repair of access services. In contrast, it would be more difficult to detect and address non-price discrimination through the application of a normal undue discrimination remedy.

10.155 We consider that discriminatory behaviour by BT in the supply of WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 services could undermine a level playing field in the related downstream markets to the detriment of competition and consumers. Therefore, the need for EOI as the most effective non-discrimination remedy (as part of a wider package of remedies) to address BT’s SMP in each of the wholesale fixed access markets is crucial to maintaining a level playing field between BT’s downstream businesses and other CPs over the course of the forward look of this review.

10.156 We disagree with the points made by BT. BT’s argument ignores that it has been subject to a separate obligation to supply many of the services in these markets on an EOI basis by virtue of the Undertakings BT gave to us in 2005 (which we accepted in lieu of making a reference to the Competition Commission under section 131 of the Enterprise Act 2002). Although imposed under a different legal framework and to address different concerns, the Undertakings’ EOI obligation has existed alongside the no undue discrimination SMP remedy. Therefore, the absence of specific issues arising during the current market review period from the current no
undue discrimination remedy reflects the combined effect of the no undue discrimination remedy imposed under the previous market review and the requirements for EOI in the BT Undertakings. Therefore we do not believe that the current position is evidence that the undue discrimination remedy is effective alone.

10.157 The BT Undertakings are intended to complement ex ante regulation under the CA03. They seek to deploy a variety of mechanisms aimed at defining equivalent treatment, and at preventing and detecting discriminatory conduct by BT when supplying wholesale network access and backhaul services to its downstream competitors. In contrast, the SMP remedies we are imposing are needed to address the competition problems we have identified in this market review. We consider that, rather than relying on elements of BT’s Undertakings (in effect a remedy under national competition law), the right approach in this market review is to impose an SMP EOI obligation which is specifically applied to address ex ante the competition problems we have found arising from our finding that BT has SMP in the WLA, WFAEL, wholesale ISDN2 and wholesale ISDN30 markets both now and over the three year review period. For this reason, we consider that it is appropriate to impose EOI in this review under the SMP framework.

10.158 This is the same approach we have already taken in the 2013 BCMR and we have taken the same approach in the 2014 WBA Statement. Moreover, noting Sky’s comment, we have no current plans to remove requirements for EOI services in the Undertakings.

10.159 Therefore, for the reasons set out above we consider that an SMP EOI remedy is appropriate and justified in order to best achieve the regulatory aims we have articulated.

Proportionality

10.160 We have also considered the proportionality of imposing EOI to address the competition concerns we have identified.

10.161 We consider that there are likely to be significant costs involved in re-engineering systems to provide existing services in the wholesale fixed access markets on an EOI basis where BT does not already do so. We therefore do not consider that it would be proportionate to require BT to do this.

10.162 However, as noted above, BT already provides a number of key wholesale services in these markets on an EOI basis by virtue of its Undertakings obligations. BT currently supplies, for example, MPF, SMPF and WLR (WFAEL, ISDN30 and ISDN2) on an EOI basis. We do not consider that imposing EOI in these circumstances would be onerous as it would not require BT to re-engineer existing systems and processes. We refer specifically to Condition 5.2(c) of the Legal Instrument in Annex 29, wherein we exclude from the scope of the EOI obligation network access which BT is not providing on an EOI basis as at the date on which the condition comes into force. Furthermore, and noting Virgin’s comment that we should consider the level of non-discrimination remedy on a case-by-case basis, in Condition 5.2(d) of the Legal Instrument we have made provision for Ofcom to consent in writing to the provision of network access on a non-EOI basis; this provides a mechanism which affords flexibility in the application of EOI where circumstances warrant it.

10.163 In reaching this view, we have taken utmost account of Recommendation 7 of the Costing and Non-discrimination Recommendation which details various considerations we should take into account in any assessment of proportionality. In
particular, as we have set out above, we are not requiring BT to redesign its existing systems to meet the EOI obligation we are imposing by way of an SMP EOI condition. Furthermore, we do not consider that in imposing an SMP EOI obligation on BT, in the manner set out above, that there is any other reason which might give rise to material compliance costs on BT which would cause us to consider that the imposition of SMP EOI is disproportionate. We have also set out above our reasons as to why we consider it appropriate to impose EOI in this review under the SMP framework rather than relying on elements of BT’s Undertakings insofar as these may be taken to mean a ‘voluntary commitment’ for the purposes of Recommendation 7(iv).

10.164 With regard to BT’s concerns around the sharing of commercial information, we note that the BT Undertakings had two purposes: equivalence at the product level (i.e. BT to offer the same or similar wholesale products to wholesale customers as it offers to itself, at the same prices and using the same or similar transactional processes) and ensuring functional separation. In the context of this market review, however, we are imposing an EOI requirement on BT to prevent it from discriminating in favour of its downstream retail business; we are not requiring as part of this market review functional separation between Openreach and the rest of BT. Given BT’s concern and reflecting this policy, we have amended the definition of EOI in the SMP condition set out in Annex 29 to include an additional exclusion for differences relating to the provision of commercial information which are necessary for purposes other than relating to the provision of network access. Our intention is that the SMP EOI condition should be no more onerous than the Undertakings and should only apply to information sharing where it is associated with the provision of network access.

10.165 In any event, as noted above, Condition 5 of the Legal Instrument makes specific provision for Ofcom to consent in writing to exclusions from the EOI requirement. We therefore consider that BT is able to make representations at any time, setting out the detail of the specific form of network access which it believes it provides in the relevant fixed access market and with regard to which it considers the requirement to provide on an EOI basis should be dis-applied. We would consider any such requests in the light of our policy intention that the SMP EOI condition is no more onerous than the Undertakings and consult on any such requests in accordance with section 49 of the CA03. The same would apply to any other differences which are permitted by the BT Undertakings but not by the SMP conditions which are subsequently identified by BT.

KCOM

10.166 Whereas in the case of BT we consider the imposition of EOI is justified and disproportionate in the circumstances described above, we consider that imposing an EOI obligation on KCOM would be disproportionate and unjustified in respect of the scale and competitive conditions in the wholesale fixed access markets in the Hull Area.

10.167 We refer, in particular, to the consideration and reasoning we have given in paragraphs 10.34 to 10.35 above in which we have decided to impose a general network access remedy (and not specific forms of access remedies) on KCOM in each of the wholesale fixed access markets in the Hull Area in the absence of clear evidence of demand. Similarly, we consider that imposing EOI requirements on KCOM now would impose costs on KCOM which might be passed onto its customers without our being clear that, in doing so, Hull Area consumers would derive competition benefits.
10.168 We therefore consider that the compliance costs of imposing EOI on KCOM at this time would likely outweigh any competition benefits that might be accrued over the course of this review. As regards the WLA market in the Hull Area, we have taken utmost account of the Costing and Non-discrimination Recommendation (in particular Recommendation 7) in our above assessment.

No undue-discrimination

10.169 Having set out our reasoning for imposing an SMP EOI requirement on BT which applies in respect of those wholesale services which it currently provides on an EOI basis, we consider that it also remains appropriate to impose a no undue-discrimination requirement on both BT and KCOM.

10.170 For KCOM this is to ensure that there is appropriate non-discrimination protection to remedy the incentive and ability for KCOM to engage in discriminatory pricing and/or non-pricing practices. For BT, this is to ensure that there is appropriate non-discrimination protection to remedy the incentive and ability for BT to engage in discriminatory pricing and/or non-pricing practices for those services provided currently that will not be subject to an EOI obligation, for any new network access services not subject to an EOI obligation (for example, where we give our consent that EOI should not apply) and also in circumstances such as where we consider there is a risk that an EOI requirement may not be effective in preventing discrimination.

10.171 BT argued that where the need for some form of non-discrimination remedy is properly identified, a wholesale product should be subject to either an SMP obligation not to unduly discriminate or an EOI SMP obligation, but not both. However, as set out above, we consider that there are circumstances where although the EOI obligation applies, it may not be effective in preventing BT from acting to discriminate against third parties. We therefore consider that it is necessary, appropriate and proportionate to apply both obligations to effectively address our concerns regarding BT’s ability to discriminate.

10.172 We consider that Chapter 3 of our Access Guidelines is relevant to the application of this provision. In this chapter, we explain that the aim of a no undue-discrimination condition is to ensure that a vertically integrated SMP operator does not treat itself in a way that benefits itself, its subsidiaries or its partners in such a way as to have a material adverse effect on competition. Furthermore, we explain that:

“In order to ensure compliance with its obligations as regards non-discrimination under the AID [Access and Interconnection Directive], in general, an SMP operator should ensure that:

a) it applies equivalent conditions in equivalent circumstances to other undertakings providing equivalent services and provides

478 In particular where such a requirement required KCOM to re-design and/or re-engineer its existing systems associated with the provision of existing wholesale network access products and services.

479 We consider this risk arises where, for example, BT provides a range of product variants such as different GEA speed and installation options some of which BT’s downstream divisions may not consume. This could also occur with new services requested by other CPs. There is therefore a risk that BT could favour the variants its own downstream divisions consume over those it does not. In this case EOI would not be, or would be less, effective.
services and information to others under the same conditions and of
the same quality as it provides for its own services, or those of its
subsidiaries or partners; and

b) it can objectively justify any differentiation”.

Decisions on requirement not to unduly discriminate and EOI

10.173 We have therefore decided that no undue discrimination and EOI conditions should
apply to BT and/or KCOM in the following markets as shown in Table 10.11 below:

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>NUD and EOI conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA</td>
<td>Yes – NUD and EOI where applicable</td>
</tr>
<tr>
<td>WFAEL</td>
<td>Yes – NUD and EOI where applicable</td>
</tr>
<tr>
<td>ISDN30</td>
<td>Yes – NUD and EOI where applicable</td>
</tr>
<tr>
<td>ISDN2</td>
<td>Yes – NUD and EOI where applicable</td>
</tr>
<tr>
<td>BT (in the UK excluding the Hull Area)</td>
<td>KCOM (in the Hull Area only)</td>
</tr>
<tr>
<td>Yes – NUD only</td>
<td>Yes – NUD only</td>
</tr>
</tbody>
</table>

Legal tests

10.174 For the reasons set out below, we are satisfied that the conditions for BT in respect
of each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the
UK excluding the Hull Area and for KCOM in the WLA, WFAEL wholesale ISDN30
and wholesale ISDN2 markets for the Hull Area (respectively in Annex 29) meet the
various tests set out in the CA03.

10.175 Section 87(6)(a) of the CA03 authorises the setting of an SMP services condition
requiring the dominant provider not to discriminate unduly against particular persons,
or against a particular description of persons, in relation to matters connected with
the provision of network access.

10.176 We have considered our duties under section 3 and all the Community requirements
set out in section 4 of the CA03. In particular, the conditions are aimed at promoting
competition and securing efficiency and sustainable competition for the maximum
benefits for consumers by preventing BT and KCOM from leveraging their SMP
through discriminatory behaviour into related downstream markets.

10.177 We also consider that the conditions meet the criteria in Section 47(2) of the CA03
which require conditions to be objectively justifiable, non-discriminatory,
proportionate and transparent. The conditions we have decided to impose are:

- objectively justifiable, in that they provide safeguards to ensure competitors, and
  hence consumers, are not disadvantaged by BT or KCOM discriminating in favour
  of their own respective downstream activities or between competing providers;

- not unduly discriminatory, in that the no undue discrimination condition applies to
  both BT and KCOM, which are the only CPs which we find have SMP in the
  relevant markets in the UK excluding the Hull Area and the Hull Area, and in that
  EOI is not imposed on KCOM as it would not be proportionate given the conditions
  in the wholesale fixed access markets in the Hull Area;

- proportionate, in that it seeks to, in the case of each of BT and KCOM, do the
  minimum necessary to prevent discrimination that would adversely affect
competition and ultimately cause detriment to consumers, and in relation to the requirement on BT to provide services on an EOI basis, that requirement only applies where BT is already providing services on the basis of EOI; and

- transparent, in that the conditions are clear in what they are intended to achieve.

10.178 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the CA03.

Consistency with the EC recommendations and the BEREC Common Position

10.179 In reaching our decision we have taken utmost account of the Costing and Non-discrimination Recommendation and the BEREC Common Position.

10.180 In relation to achieving the objective of a level playing field\textsuperscript{480}, the BEREC Common Position identifies, amongst other things, as best practice that:

“\textit{BP19 NRAs should impose an obligation on SMP CPs requiring equivalence, and justify the exact form of it, in light of the competition problems they have identified.}

\textit{BP19a NRAs are best placed to determine the exact application of the form of equivalence on a product-by-product basis. For example, a strict application of EOI is most likely to be justified in those cases where the incremental design and implementation costs of imposing it are very low (because equivalence can be built into the design of new processes) and for certain key legacy services (where the benefits are very high compared to the material costs of retro-fitting EOI into existing business processes. In other cases, EOO would still be a sufficient and proportionate approach to ensure non-discrimination (e.g. when the wholesale product already shares most of the infrastructure and services with the product used by the downstream arm of the SMP operator)".}

10.181 In reaching our decision, we have also taken into consideration the Costing and Non-discrimination Recommendation in which, in particular, the EC proposes that effective non-discrimination is best achieved by the application of EOI where proportionate.

10.182 We note that BT argues that, in proposing an SMP EOI remedy on BT in wholesale fixed access markets, we have failed to meet the standard recommended in the Costing and Non-discrimination Recommendation. We believe that BT is incorrect in this assessment.

10.183 The Costing and Non-discrimination Recommendation recommends:

\textsuperscript{480} In this respect, the BEREC Common Position identifies the following competition issues which arise frequently: SMP players having an unfair advantage; having unmatchable advantage by virtue of their economies of scale and scope, especially if derived from a position of incumbency; discriminating in favour of their own group business (or between its own wholesale customers), either on price or non-price issues; and exhibiting obstructive and foot-dragging behaviour.
“Where NRAs consider that the imposition of a non-discrimination obligation on SMP operators under Article 10 of Directive 2002/19/EC is appropriate, proportionate and justified pursuant to Article 16(4) of Directive 2002/21/EC and Article 8(4) of Directive 2002/19/EC, they should examine whether it would be proportionate to require SMP operators to provide relevant wholesale inputs on an EOI basis. In doing so, NRAs should consider, among other things, whether the compliance costs, for example due to the re-design of existing systems, are outweighed by the envisaged competition benefits. In doing so, the NRA should take into account in the proportionality assessment, inter alia, the following considerations: (i) incremental costs of compliance with EOI are likely to be low when new systems are being designed, (ii) the potentially linked non-imposition of regulated wholesale access prices on NGA networks as recommended in points 48 and 49, (iii) the potentially positive effect the application of EOI might have on innovation and competition, (iv) any voluntary commitment by the SMP operator to provide wholesale inputs to access seekers on an EOI basis, as long as such a voluntary offer meets the conditions set out in this Recommendation and (v) the number and size of the SMP operator(s)”.

10.184 It is our view that the approach we have adopted is consistent with the position set out in the Costing and Non-discrimination Recommendation. Contrary to BT’s assertion, having found that it is appropriate, proportionate and justified to impose an obligation under Article 10 of Directive 2002/19/EC, we have gone on to undertake a proportionality assessment of imposing EOI on BT (set out above) which takes into account the considerations set out in the recommendation.

10.185 The Costing and Non-discrimination Recommendation is clear that where the proportionality assessment is met it is recommended that “EOI should be applied at the most appropriate level(s) in the value chain to those wholesale inputs which the SMP operator provides to its own downstream businesses” unless it is clear that there is no demand for a particular wholesale input. We consider that the approach we have taken is consistent with this recommendation.

EOO

10.186 We have also taken utmost account of the Costing and Non-discrimination Recommendation in reaching our decision to impose a no undue discrimination condition on BT and KCOM. There are three recommendations relevant in this regard:

- that NRAs should ensure that the SMP operator provides wholesale inputs on at least an EOO basis;
- that NRAs should ensure that when a non-discrimination obligation is imposed, access seekers can use the relevant systems and processes with the same degree of reliability and performance as the SMP operators’ own downstream retail arm; and
- that NRAs should require SMP operators subject to a non-discrimination obligation to provide access seekers with regulated wholesale inputs that allow the access seeker to effectively replicate technically new retail offers of the downstream retail arm of the SMP operator, in particular where EOI is not fully implemented.
10.187 We consider that the no undue discrimination obligation which we are imposing is consistent with the Costing and Non-discrimination Recommendation.

10.188 EOO requires the provision of all wholesale inputs to access seekers in a manner which is comparable, in terms of functionality and price, to those the SMP operator provides to its own downstream businesses, albeit using potentially different systems and processes. The Costing and Non-discrimination Recommendation (Recommendation 10) makes clear that we should ensure that whatever the systems and processes used by access seekers the end result provides the same degree of reliability and performance to that enjoyed by the SMP operators’ own downstream retail division(s).

**No undue-discrimination**

10.189 We consider that the no undue discrimination obligation is consistent with this. Discrimination is deemed undue in any circumstances where the dominant provider unfairly favours to a material extent an activity carried on by it so as to place one or more third parties at a competitive disadvantage in relation to activities carried on by the dominant provider. Therefore, if the wholesale inputs provided to access seekers were not comparable in functionality or price, or if the systems and process used by access seekers were less reliable or provided a lesser performance to that enjoyed by the dominant provider’s own retail divisions, such activities would be unduly discriminatory if they unfairly favoured the dominant provider to a material extent resulting in placing third parties at a competitive disadvantage. This is reinforced in our Access Guidelines which make clear that there is a rebuttable presumption that a vertically integrated SMP operator discriminating in favour of its own downstream business would have a material adverse effect on competition.

**Technical replicability**

10.190 We note that the Costing and Non-discrimination Recommendation also provides for the application of a technical replicability test, whether undertaken by the SMP operator and provided to the NRA or undertaken by the NRA itself, to ensure that access seekers can technically replicate new retail offers of the downstream business of the SMP operator.

10.191 We proposed in the July 2013 FAMR Consultation (in relation to our consideration of the draft Costing and Non-discrimination Recommendation) that it was neither appropriate nor proportionate to impose specific technical replicability requirements on BT (or KCOM) in this review. Now that the Costing and Non-discrimination Recommendation has been finalised and we must take utmost account of it, we have further reviewed this and set out our decision below.

10.192 We recognise, as noted in Recital 20 of the Costing and Non-discrimination Recommendation, that it is important for a level playing field that access seekers can technically replicate the retail offer of the SMP operator on the basis of the regulated wholesale input they receive. We further note that the Costing and Non-discrimination Recommendation identifies that the issue of technical replicability may be significant in circumstances where the SMP operator is not subject to requirements to provide wholesale inputs on an EOI basis or where EOI has not yet been fully implemented.
10.193 In this review, we have taken full account of the need to ensure that access seekers are able to compete in the downstream retail markets on a level playing field with the two dominant wholesale providers, including the ability to technically replicate retail offers using regulated wholesale inputs.

10.194 In the WLA market in the Hull Area, where we have found KCOM to hold SMP, we have observed that there remains little appetite amongst other providers to offer services to consumers in this limited geographic area. This is the case notwithstanding that KCOM has been and will continue to be subject to a package of SMP remedies including a general network access, no undue discrimination and certain transparency obligations. Given this absence of any material demand for network access from KCOM in the Hull Area, we consider that it is premature to consider imposing detailed technical replicability test requirements on KCOM and to do so would increase the regulatory burden (and potentially pass costs on to Hull Area consumers) without any significant prospect that it would result in benefits to competition. This is the same reason why we have decided not to impose specific network access remedies and other remedies such as EOI on KCOM at this time.

10.195 In relation to the WLA market in the UK excluding the Hull Area, we have found that BT continues to hold SMP. This gives rise to a number of competition problems for which we have imposed a range of measures in this review for the purposes of sustaining competition at the retail level for services including voice, broadband and superfast broadband. In particular, we are re-imposing EOI requirements on BT in circumstances where EOI has been fully implemented i.e. in relation to VULA (imposed in our 2010 WLA Statement) and those wholesale inputs applicable to the markets being considered in this review which BT already provides on an EOI basis pursuant to its Undertakings which it gave to us in 2005. These remedies are inclusive of the provision of LLU and VULA wholesale inputs by BT on an EOI basis which means that the wholesale inputs used by BT are the same as those used by third party CPs. We are satisfied that these regulated wholesale inputs, which have been carefully developed to ensure they are fit-for-purpose, ensure that competitors can technically replicate BT’s NGA and CGA-based retail offerings. Consequently, we consider that the additional imposition of a technical replicability test is not appropriate or proportionate.

10.196 In summary and, having taken utmost account of the Costing and Non-discrimination Recommendation in relation to technical replicability, we do not consider it either appropriate or proportionate to additionally impose specific technical replicability test requirements on BT and/or KCOM in this review period. We are satisfied that, where access seekers demand network access in WLA markets, the necessary provisions are in place to enable CPs to access regulated wholesale inputs that enable them to technically replicate the retail offers of dominant providers.

Requirements for accounting separation

Current remedies

10.197 BT and KCOM are currently subject to accounting separation obligations as set out in Table 10.12 below.

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481 Which includes WLA markets to which the Costing and Non-discrimination Recommendation applies.
### Table 10.12: Current Accounting Separation obligations

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Existing Accounting Separation obligations</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT (in the UK excluding the Hull Area)</td>
<td>KCOM (in the Hull Area only)</td>
</tr>
<tr>
<td>WLA</td>
<td>Yes</td>
</tr>
<tr>
<td>WFAEL</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN30</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN2</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Aim and effect of regulation**

10.198 The accounting separation obligation requires dominant providers to report separately for each of the relevant markets and services, and account separately for internal and external ‘sales’. This provides a greater detail of information (and therefore transparency) than that derived from the statutory financial statements of the notified operator and allows Ofcom and third party CPs to monitor the activities of BT and KCOM to ensure that they do not discriminate in favour of their own downstream businesses.

10.199 We have set out above why and in which wholesale fixed access markets we have decided to impose certain non-discrimination remedies on BT and KCOM.

**Proposals as set out in the July 2013 FAMR Consultation**

10.200 We proposed that an accounting separation condition should apply to BT and KCOM in the following markets as shown in Table 10.13 below.

### Table 10.13: Proposed Accounting Separation obligation

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Proposed Accounting Separation obligation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT (in the UK excluding the Hull Area)</td>
<td>KCOM (in the Hull Area only)</td>
</tr>
<tr>
<td>WLA</td>
<td>Yes</td>
</tr>
<tr>
<td>WFAEL</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN30</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN2</td>
<td>Yes</td>
</tr>
</tbody>
</table>

10.201 In the July 2013 FAMR Consultation we asked:

10.5 Do you agree with our proposals regarding requirements on BT and KCOM in relation to accounting separation? Please provide reasons in support of your views.

**Regulatory financial reporting**

10.202 On 20 December 2013 we published our proposals to change the framework for BT’s regulatory financial reporting from the current framework which was first implemented in 2004.482

10.203 These proposals amended those which we set out in the July 2013 FAMR Consultation in relation to a regulatory accounting obligation on BT in the WLA.

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WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the UK excluding the Hull Area. In particular, we proposed to apply to BT a new regulatory accounting condition in these markets. We proposed no changes to the SMP condition relating to KCOM’s regulatory accounting obligation.

Stakeholder responses to the July 2013 FAMR Consultation

10.204 Apart from Vodafone, who stated that it would respond to Ofcom’s separate consultation on accounting reform, respondents to this question generally agreed with our proposals for imposing accounting separation obligations on BT and KCOM.

10.205 [\[\]] suggested that, in addition to accounting separation reporting obligations, full legal and audit separation would provide further assurance that BT and KCOM were meeting their regulatory obligations.

10.206 Both BT and KCOM questioned whether the obligations remained proportionate for wholesale ISDN30 and wholesale ISDN2 products. BT also suggested that a less onerous accounting separation obligation should be imposed, noting Deloitte’s view that “the requirements of BT’s annual regulatory financial submission are among the most detailed and onerous in Europe.”

Reasoning and decisions on accounting separation

10.207 We set out below our reasoning, decisions and legal tests for imposing a new SMP condition in respect of an accounting separation obligation on BT in the light of the competition problems we have identified in the wholesale fixed access markets. We cross refer, where appropriate, to the 2014 Regulatory Financial Reporting Statement, which sets out our considerations (in light of stakeholder responses to our proposals) and conclusions on the policy changes to BT’s regulatory financial reporting framework and also our reasoning in relation to the specific form of the SMP condition we are imposing on BT.

10.208 Sections 87(7) and 87(8) of the CA03 authorise Ofcom to impose appropriate accounting separation obligations on dominant providers in respect of the provision of network access, the use of the relevant network and the availability of relevant services.

10.209 We have decided that it is appropriate to impose an accounting separation obligation on BT in each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2

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485 [\[\]]
markets in which we have found that BT has SMP. We consider that this obligation is necessary to monitor BT’s activities with regard to its non-discrimination obligations.

10.210 We refer to the 2014 Regulatory Financial Reporting Statement in which we set out our reasoning and decisions on the specific form of the accounting separation requirements we are imposing on BT in these markets.490

10.211 We consider it appropriate that KCOM is subject to an accounting separation obligation in relation to services provided in each of the WFAEL, wholesale ISDN30491 and wholesale ISDN2 markets in the Hull Area in which KCOM provides wholesale services. We consider that this obligation is appropriate and necessary to monitor KCOM’s activities with regard to its non-discrimination obligations in relation to the wholesale services it supplies. On this basis, we have decided to impose an accounting separation obligation on KCOM in the wholesale ISDN30 market, in respect of which an accounting separation obligation is not currently imposed.

10.212 We consider that this obligation would be disproportionate in the WLA market in the Hull Area, as there is currently no demand for the supply of copper loop-based492 and fibre-based local access at a fixed location in the Hull Area. We will reconsider this position should KCOM start providing wholesale copper loop or fibre-based local access, at which point an accounting separation requirement could become important to complement any non-discrimination obligation(s).

10.213 In light of this, BT and KCOM will be required to publish (in relation to those markets in which we have decided it is appropriate to impose an accounting separation obligation) information including revenue, prices and volumes, separately identifying internal and external activities. They will also be required to publish FAC at a market level.

10.214 With regard to BT’s comments on wholesale ISDN30 and ISDN2, we refer to our assessment of the retail and wholesale markets for ISDN30 and ISDN2 in which we carefully considered and assessed demand over the period of this review. We consider that it remains appropriate to remedy BT’s SMP (in the UK excluding the Hull Area) in these wholesale ISDN markets by, amongst other things, requiring BT to supply wholesale ISDN30 and wholesale ISDN2 products on a non-discriminatory basis for the period of this review. In light of this, we remain of the view that an accounting separation requirement is an appropriate and proportionate measure to enable both us and other CPs to monitor BT’s compliance with this remedy over the course of the review period.

10.215 We note [ ] suggestion regarding full legal and audit separation. While we have considered improvements generally in our review of the regulatory financial reporting framework for BT, we consider that the requirement on dominant providers to

490 We consider that the outcome of this review addresses BT’s general point about its regulatory reporting obligations should be less onerous.
491 In relation to ISDN30 services, we note that KCOM has published in its RFS for the year ending 31 March 2012 its internal and external sales of wholesale ISDN30 exchange line services in the Hull Area: KCOM, Regulatory Financial Statements for the year ending 31 March 2012, 27 July 2012, www.kcomplc.com/docs/regulatory-pdf/final_statements_2012.pdf.
492 We note that KCOM has published a draft Reference Offer for LLU at www.kcomplc.com/regulatory-information/reference-offers/kc-local-loop-unbundling/, but that, as of 6 May 2014, no KCOM exchanges in the Hull Area had been unbundled. Informal information submission from KCOM, 6 May 2014.
account separately for internal and external ‘sales’ and to publish this information, is sufficient to achieve the aim and effect of the regulation (as set out above) in relation to the wholesale markets under consideration here.

Decisions on accounting separation obligations

10.216 On the basis of the reasoning set out above, we have decided to impose the SMP condition as set out in Annex 29 and that it should apply to BT and KCOM in the following markets as shown in Table 10.14 below:

Table 10.14: Decisions on Accounting Separation obligation

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Accounting Separation obligation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT (in the UK excluding the Hull Area)</td>
<td>Yes</td>
</tr>
<tr>
<td>KCOM (in the Hull Area only)</td>
<td>No</td>
</tr>
<tr>
<td>WLA</td>
<td>Yes</td>
</tr>
<tr>
<td>WFAEL</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN30</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN 2</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Legal tests

10.217 For the reasons set out below, we are satisfied that imposing an accounting separation requirement for BT in respect of each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the UK excluding the Hull Area and for KCOM in the WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the Hull Area (respectively in Annex 29) meets the various tests set out in the CA03.

10.218 Sections 87(7) and 87(8) of the CA03 authorise Ofcom to impose appropriate accounting separation obligations on dominant providers in respect of the provision of network access, the use of the relevant network and the availability of relevant services.

10.219 We consider that imposing an accounting separation condition meets our duties under sections 3 and 4 of the CA03. We consider that the imposition of an accounting separation obligation promotes competition in relation to the provision of electronic communications networks and services, ensuring the provision of network access and service interoperability for the purposes of securing efficiency and sustainable competition and the maximum benefit for customers of CPs. This is because the imposition of the obligation ensures that other obligations designed to curb potentially damaging leveraging of market power, in particular the requirement not to unduly discriminate, can be effectively monitored and enforced. With regard to the Community requirements set out in section 4 of the CA03, we believe that the condition meets the requirements. Specifically, we believe section 4(8) is met, where the obligation has the purpose of securing efficiency and sustainable competition in the markets for electronic communications networks and services, by helping to ensure that dominant providers comply with other obligations, in particular non-discrimination requirements.

10.220 We also consider that our decision to impose an accounting separation requirement meets section 47(2) of the CA03 which requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. We consider the condition is:

- objectively justifiable, in that it relates to the need to ensure competition develops fairly to the benefit of consumers;
• not unduly discriminatory, in that it is imposed on BT, which is the only CP which we find has SMP in the relevant markets in the UK excluding the Hull Area, while for KCOM, which we find has SMP in the Hull Area, we consider that there are objective reasons as to why the obligation is not appropriate in the WLA market but is appropriate in other relevant markets;

• proportionate, in that it is the least onerous obligation necessary as a mechanism to allow us and third parties to monitor potentially discriminatory behaviour by dominant providers, except for KCOM in the WLA market in the Hull Area where we consider that the obligation is unnecessary; and

• transparent, in that it is clear the intention is to monitor compliance with specific remedies and the particular accounting separation requirements of BT and KCOM are clearly documented.493

10.221 In our 2014 Regulatory Financial Reporting Statement we provide further detail as to how the specific form of accounting separation requirements we have decided to impose on BT (in the form of the SMP condition in Annex 29) meet the relevant legal tests. This reasoning supplements the considerations set out above.

10.222 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the CA03.

10.223 With regard to the accounting separation obligation which we are imposing on KCOM in the WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the Hull Area, we make certain amendments to the SMP conditions imposing accounting separation requirements set out in Annexes 2 and 3 to the 2004 Accounting Statement.

Transparency

10.224 Section 87(6)(b) of the CA03 authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information as they may direct for the purpose of securing transparency. Section 87(6)(c) of the CA03 authorises the setting of SMP services conditions requiring the dominant provider to publish, in such a manner as Ofcom may direct, the terms and conditions on which it is willing to enter into an access contract. Section 87(6)(d) also permits the setting of SMP services conditions requiring the dominant provider to include specified terms and conditions in the Reference Offer. Finally, section 87(6)(e) permits the setting of SMP services conditions requiring the dominant provider to make such modifications to the Reference Offer as may be directed from time to time.

10.225 The requirements for the transparency of charges, terms and conditions in markets in which one operator is dominant are complementary remedies to ensure that third party CPs are able to make effective use of the dominant providers’ network access.

10.226 BT and KCOM are currently subject to three transparency obligations in respect of their SMP in each of the wholesale fixed access markets. They are:

• a requirement to publish a Reference Offer;

• a requirement to notify changes to charges in advance and, in relation to WLA network access products and services, also notify changes to terms and conditions; and

• a requirement to notify technical information.

10.227 In the following sub-sections, we discuss each of these three remedies in turn.

Requirement to publish a Reference Offer

Current remedies

10.228 BT and KCOM are currently required to publish a Reference Offer in relation to the provision of network access in each of the wholesale fixed access markets. Table 10.15 details the relevant current SMP conditions.

Table 10.15: Current SMP conditions concerning the requirement to publish a Reference Offer

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Existing SMP conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA</td>
<td>BT (in the UK excluding the Hull Area)</td>
</tr>
<tr>
<td></td>
<td>KCOM (in the Hull Area only)</td>
</tr>
<tr>
<td>WFAEL</td>
<td>SMP condition AAAA5</td>
</tr>
<tr>
<td></td>
<td>SMP condition AAAB4</td>
</tr>
<tr>
<td>ISDN30</td>
<td>SMP condition AAA(IS)5</td>
</tr>
<tr>
<td></td>
<td>SMP condition AAB(IS)4</td>
</tr>
<tr>
<td>ISDN2</td>
<td>SMP condition AAA5</td>
</tr>
<tr>
<td></td>
<td>SMP condition AAB4</td>
</tr>
</tbody>
</table>

10.229 In each of the wholesale fixed access markets, BT and KCOM are currently subject to a requirement to publish a Reference Offer including terms and conditions for provisioning, technical information, SLAs and SLGs, and availability of co-location.

10.230 However, in respect of the WLA market, BT is also subject to a requirement to publish additional information in its Reference Offer concerning the LLU and PIA network access remedies which it is currently required to provide. Our consideration of the requirement on BT to provide these specific forms of network access are set out in Sections 13 and 12 respectively.

Aim and effect of regulation

10.231 A requirement to publish a Reference Offer has two main purposes:

• to assist transparency for the monitoring of potential anti-competitive behaviour; and

• to give visibility to the terms and conditions on which other providers will buy wholesale services.

10.232 This helps to ensure stability in markets, and without it incentives to invest might be undermined and market entry less likely.

10.233 The publication of a Reference Offer potentially allows for speedier negotiations, avoids possible disputes and gives confidence to those buying wholesale services that they are being provided on non-discriminatory terms. Without this, market entry
might be deterred to the detriment of the long term development of competition and hence consumers.

10.234 This remedy complements the network access and non-discrimination requirements on dominant providers to address the competition concerns arising from a position of SMP in the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets.

Proposals as set out in the July 2013 FAMR Consultation

10.235 We proposed that Reference Offer conditions should apply to BT and KCOM in the following markets as shown in Table 10.16 below:

Table 10.16: Proposed Reference Offer obligations

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Proposed Reference Offer conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA</td>
<td>BT (in the UK excluding the Hull Area)</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>WFAEL</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN30</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN2</td>
<td>Yes</td>
</tr>
</tbody>
</table>

10.236 We also proposed to augment the generic requirement for BT to include SLAs and SLGs in Reference Offers by specifying via SMP conditions the minimum set of SLAs and SLGs linked to services or activities that BT is required to offer in its Reference Offers for specified products.\(^{494}\) We proposed that (with one exception) the services covered by this obligation would be those for which BT already has SLAs and SLGs in place.

10.237 Although BT does not currently have an SLA and SLG in place related to the availability of appointments for GEA, we proposed to specify a regulatory requirement for BT to offer these.

10.238 In the 2013 FAMR July Consultation we asked:

10.6  Do you agree with our proposals regarding requirements on BT and KCOM to publish a Reference Offer? Please provide reasons in support of your views.

10.7  Do you agree with the proposal to specify the services for which BT is to provide SLA/SLGs? Also do you consider that we have identified all appropriate services that should be subject to an SLA/SLG requirement at this time? If not, please set out what services should be included and provide reasons in support of your views.

\(^{494}\) See paragraphs 10.157-10.164, Ofcom, *Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - Consultation on the proposed markets, market power determinations and remedies*, 3 July 2013, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/summary/fixed-access-markets.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/summary/fixed-access-markets.pdf). These products are MPF, Shared Access, VULA, Wholesale Analogue Line Rental, Wholesale ISDN30 Line Rental and Wholesale ISDN2 Line Rental.
Stakeholder responses to the July 2013 FAMR Consultation

Requirement to publish a Reference Offer

10.239 BT\(^{495}\), KCOM\(^{496}\), Virgin\(^{497}\), Verizon\(^{498}\) and Vodafone\(^{499}\) all broadly agreed with our proposals to require BT and KCOM to publish a Reference Offer.

10.240 While EE also agreed with the continued requirement to publish a Reference Offer, it did not agree with the proposal to remove the obligation on BT to publish usage factors for its network components, as EE considered that the current level of detail provides transparency (helping to monitor pricing) and assisted in making better informed buying decisions. EE also considered that BT should send copies (or at least up-to-date links) to its Reference Offer for the purposes of compliance monitoring. \(^{500}\)

10.241 [\[^{500}\]\] also agreed that such a condition was required, but suggested that Ofcom needed to take action in order to incentivise BT to act expediently and fairly when negotiating the Reference Offer. \(^{501}\)

Quality of service

10.242 BT\(^{502}\), EE\(^{503}\), the FCS\(^{504}\), KCOM\(^{505}\), Openreach\(^{506}\), Sky\(^{507}\), Verizon\(^{508}\) and Virgin\(^{509}\) supported our proposal to require BT to include SLAs and SLGs for specific services


\(^{496}\) P.8, KCOM response to July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/KCOM.pdf.


\(^{500}\) P.7-8, EE response to July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.

\(^{501}\) P.7-8, EE response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.


\(^{503}\) P.8, EE response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.

\(^{504}\) P.4, FCS response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Federation_of_Communication_Services_Ltd.pdf.

\(^{505}\) P.11, KCOM response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/KCOM.pdf.


in its Reference Offers for specific products. Some stakeholders proposed that Ofcom require BT to offer SLAs and SLGs for services further to those that we specified in the consultation. We consider these proposals in paragraph 10.256 to 10.258.

10.243 Openreach\textsuperscript{510} argued that our proposal for a regulatory requirement for an SLA and SLG for appointment availability in its Reference Offer for GEA would be contrary to our intention, set out in the consultation, that commercial negotiation should determine the detail of the terms under which BT offered its services. Openreach further argued that this aspect of our proposals was unnecessary because industry was already discussing the provision of such an SLA and SLG, that there was no evidence that a problem existed, and that the requirement could have unintended consequences for the resourcing of other work.

10.244 Sky\textsuperscript{511}, TalkTalk\textsuperscript{512} and KCOM\textsuperscript{513} proposed that Ofcom publish further guidance on setting SLAs and SLGs for new products (i.e. those not covered by our proposals), how SLAs should be set and the principles to which SLAs should adhere, respectively.

10.245 BT (on behalf of its retail businesses) argued that the SLAs and SLGs that BT was required to include in Reference Offers should cover every significant area of provision and repair.\textsuperscript{514}

10.246 KCOM proposed that BT be required to both negotiate and to agree with CPs the SLAs and SLGs that it includes in Reference Offers.\textsuperscript{515}

Reasoning and decisions on requirements to publish a Reference Offer

Requirement to publish a Reference Offer

10.247 We consider that the requirement to publish Reference Offers imposed in previous market reviews has been effective in meeting the aims of the regulation detailed above. Therefore we consider it appropriate to re-impose similar requirements on BT

\textsuperscript{513} P.11, KCOM Response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/KCOM.pdf.
\textsuperscript{514} Paragraph 201, BT response to July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.
\textsuperscript{515} P.11, KCOM Response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/KCOM.pdf, and informal information submission from KCOM of 22 January 2014.
and KCOM in this market review, in that BT and KCOM should be required to publish a Reference Offer for wholesale network access products in each of the wholesale fixed access markets.

10.248 The condition requires the publication of a Reference Offer and specifies the information to be included in that Reference Offer (set out below) and how the Reference Offer should be published. It prohibits the dominant provider from departing from the charges, terms and conditions in the Reference Offer and requires it to comply with any directions Ofcom may make from time to time under the condition. To the extent that BT uses the service in a different manner to CPs or uses similar services, BT is required to publish a Reference Offer in relation to those services, and the published Reference Offer must set out as a minimum such matters as:

- a clear description of the services on offer including technical characteristics and operational processes for service establishment, ordering and repair;
- the locations of points of network access and the technical standards for network access;
- conditions for access to ancillary and supplementary services associated with the network access including operational support systems and databases etc;
- contractual terms and conditions, including dispute resolution and contract negotiation/renegotiation arrangements;
- charges, terms and payment procedures; and
- SLAs and SLGs.

10.249 We further consider it appropriate to retain, for the purposes of transparency, the existing additional Reference Offer requirements in respect of the provision by BT of LLU services and PIA. They require, amongst other things, details to be included in a Reference Offer about LLU co-location arrangements and, in relation to PIA, conditions for the installation and recovery of cables and associated equipment.

10.250 We have removed the requirement on BT and KCOM to include in their Reference Offer an amount applied to each network component with the relevant usage factors for each network component or combination of such components, reconciled in each case to the charge payable by a CP. We no longer consider that this information is required in the Reference Offer, in line with our decision in the 2013 Narrowband Statement. BT and KCOM are required to publish the FAC of certain regulated wholesale products based on component costs and usage factors in their respective RFS. EE and other CPs will therefore continue to have access to this level of detail through BT and KCOM’s published RFS.

10.251 We do not consider that our ability to conduct compliance activities is in any way impaired by removing the requirement on BT and KCOM to routinely send us copies of Reference Offers as EE suggests. In particular, should we require such information (which, as we explained, is published on BT and KCOM’s respective websites) in relation to compliance concerns we have the power to require the provision of the relevant information under our statutory information gathering powers. Again this approach is consistent with that taken in the 2013 Narrowband Statement.
10.252 We note additional comments regarding BT’s behaviour in relation to negotiating access agreements to which the terms and conditions of a Reference Offer relate. In particular, we note its suggestion that Ofcom should take action by using its powers under section 185A of the CA03 in order to lower the threshold by which CPs could bring a dispute regarding such access agreements, affording Ofcom the ability to resolve such disputes involving multiple CPs more effectively. Insofar as section 185A is relevant to our consideration of any disputes relating to the provision of network access, we will exercise our discretion under this provision where we consider it appropriate to do so given the particular circumstances of each case.

Quality of service

10.253 We have decided to proceed with our proposal to impose a regulatory requirement on BT to include SLAs and SLGs linked to specific services in its Reference Offers for specified forms of network access. This requirement is for WLR, LLU, GEA, wholesale ISDN2 line rental and wholesale ISDN30 line rental services. We consider that this is necessary in order to make it clear for which forms of network access BT is required to include SLAs and SLGs within its Reference Offer. In reaching this view, we note the broad measure of support we received for this aspect of our proposals and also that the extent of BT’s obligations to offer SLAs and SLGs for MPF New Provide were the subject of a recent dispute, reinforcing our view that further clarity around BT’s obligations is required.

10.254 In relation to the Reference Offer for GEA, Openreach argued that our proposal to require BT to offer an SLA/SLG for appointment availability would be contrary to the principle that commercial negotiation should determine the detail of the terms under which BT offers its services. However, we consider it necessary to specify the minimum set of SLAs and SLGs that BT must offer, in order to ensure that services are structured to deliver the service quality expected by consumers. Specifying that BT must offer an SLA/SLG for GEA appointment availability is consistent with this position. We do not consider that doing so would unduly undermine BT’s ability to negotiate appropriate commercial terms for the delivery of the product, as the requirement does not constrain the terms of the SLA or SLG, which must otherwise be fair and reasonable. Moreover, as we noted in the July 2013 FAMR Consultation, we are concerned that not to impose such a requirement in relation to GEA would risk inconsistency with WLR and LLU and potentially result in a future point of service failure, particularly as we expect GEA to emerge to take a significant proportion of the access market in the future.

10.255 As BT does not currently have in place a Reference Offer containing an SLA/SLG for appointment availability for GEA, we must consider the timing of this requirement. We consider six months to be a reasonable timeframe in which to require BT to incorporate this SLA/SLG into its Reference Offer. Accordingly, SMP condition 8.2I requires BT to offer an SLA/SLG for appointment availability for GEA no later than six months after the publication of this Statement.

10.256 With regard to Sky, TalkTalk and KCOM’s proposals that Ofcom publish further guidance on aspects of setting SLAs and SLGs, we consider that doing so would require Ofcom to state in detail how industry should approach the setting of SLAs
and SLGs for products and services other than those that we have specified. We consider that doing so would be contrary to our intention of making BT’s existing commitments more transparent while letting commercial negotiations specify in detail the terms under which BT offers its services. We consider this approach to be the most appropriate, not least because of the possibility of future changes to the way that Openreach delivers services and to the needs of CPs. To set out such principles in the abstract now would, in our view, risk hindering genuine commercial negotiations at a later stage.

10.257 For the same reasons we have decided not to require SLAs and SLGs for any product other than those we consulted on. We would consider in subsequent reviews whether we should extend these requirements to new products.

10.258 It is important to note that the SLAs and SLGs specified in the SMP conditions are the minimum set of SLAs and SLGs that BT must offer as part of its Reference Offers for certain services. This is not to say that industry may not consider that it is desirable for other elements of these services to have associated SLAs and SLGs. We would expect that the process that we have specified for OTA2-led negotiations provides the appropriate framework for considering such additional contractual terms.517

10.259 KCOM has proposed that BT be required to negotiate or reach ‘agreement’ with CPs about the SLAs and SLGs that it offers. We do not consider that it would be appropriate, or indeed particularly meaningful, to impose a regulatory requirement that BT negotiate or reach agreement with CPs given our expectation that the negotiations should take place on genuinely commercial terms. However, we recognise the need to encourage commercial negotiations concerning SLAs and SLGs, hence our guidance for a structured negotiation process led by the OTA2, which is discussed in Section 11.

**Decisions on requirements to publish a Reference Offer**

10.260 On the basis of the reasoning set out above, we have decided that a requirement to publish a Reference Offer should apply to BT and KCOM in the following markets as shown in Table 10.17 below:

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Reference Offer conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA</td>
<td>BT (in the UK excluding the Hull Area)</td>
</tr>
<tr>
<td>WFAEL</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN30</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN2</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Legal tests**

10.261 For the reasons set out below, we are satisfied that imposing conditions on BT in respect of each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the UK excluding the Hull Area and for KCOM in the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets for the Hull Area (respectively in

517 See paragraphs 11.414 to 11.425
Annex 29) meet the various tests set out in the CA03. As explained above, sections 87(6)(c), (d) and (e) authorise the SMP condition we are imposing.

10.262 We consider that the condition meets our statutory obligations and the Community requirements under sections 3 and 4 of the CA03.

10.263 The requirement to publish a Reference Offer will, in combination with a requirement not to discriminate and/or discriminate unduly, facilitate service interoperability and allow CPs to make informed decisions about future entry into the relevant market. Further, the obligation will enable buyers to adjust their downstream offerings in competition with BT in response to changes in BT’s terms and conditions. Finally, the obligation will make it easier for Ofcom and other CPs in the relevant market to monitor any instances of discrimination. Therefore, we consider that the condition in particular furthers the interests of consumers in relevant markets by the promotion of competition in line with section 3 of the CA03.

10.264 Ofcom considers that the condition meets the Community requirements set out in section 4 of the CA03. In particular, the condition promotes competition and encourages the provision of network access and service interoperability for the purpose of securing efficiency and sustainable competition for the maximum benefit for consumers. The publication of a Reference Offer will mean that other CPs will have the necessary information readily available to allow them to make informed decisions about entry into the market.

10.265 We also consider that this condition meets section 47(2) of the CA03 which requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. We consider the condition is:

- objectively justifiable, in that it requires that terms and conditions are published in order to encourage competition, provide stability in markets and monitor discriminatory behaviour;

- not unduly discriminatory, in that it applies to both BT and KCOM, which are the only CPs which we have found have SMP in the relevant markets in the UK excluding the Hull Area and the Hull Area respectively;

- proportionate, in that only information that is considered necessary to allow CPs to make informed decisions about competing in downstream markets is required to be provided; and

- transparent, in that the condition is clear in its intention that BT and KCOM publish details of their wholesale service offerings. We have included more specific direction, in particular around SLAs and SLGs, which should improve the transparency of what is required of BT under the obligation we are imposing.

10.266 Article 9(4) of the Access Directive requires that, where network access obligations are imposed, NRAs shall ensure the publication of a Reference Offer containing at least the elements set out in Annex II to that Directive and we are satisfied that this requirement is met.

10.267 For the reasons set out above, we consider that the condition we have decided to impose is appropriate to address the competition concerns identified, in line with section 87(1) of the CA03.
Consistency with the EC recommendations and the BEREC Common Position

10.268 In making these decisions we have also taken utmost account of the BEREC Common Position. In relation to the objective of achieving a reasonable quality of access products (operational aspects), the BEREC Common Position identifies, among other things, as best practice that:

“BP32 NRAs should require SMP operators to provide a reasonable defined level of service.

BP32a Service Level Agreements (SLAs) should cover specific service areas. Services areas when SLAs are most likely to be necessary are ordering, delivery, service (availability) and maintenance (repair).

BP32b SLAs should be made available to wholesale operators. To ensure maximum transparency and comparability of the terms provided by SMP operators to alternative operators and their downstream arm, all SLAs could be made available to all relevant wholesale customers (including those outside from a specific Member State). For example, SMP operators could make them available on demand or automatically publish these on their website (as part of their Reference Offer).

BP32c NRAs should take oversight for the process of setting SLAs. NRAs should determine the level of their involvement in this process by taking into account specific market circumstances and particular concerns for discriminatory behaviour.

BP33 NRAs should impose a generic requirement on SMP operators to provide Service Level Guarantees (SLGs).

BP33a SLGs should cover all necessary specific service areas. Service areas where SLGs are most likely to be necessary are ordering, delivery, service (availability) and maintenance (repair).

BP33b SLG payments should be made without undue delay and should be proactive in nature. That is, with a pre-established process for the payment and billing of the SLGs among operators and without the need for alternative operators to request the intervention of any third party i.e. NRAs or courts.

BP33c NRAs should take oversight for the process of setting SLGs. NRAs should determine the level of their involvement in this process by taking into account specific market circumstances and particular concerns for discriminatory behaviour”.

518 BoR (12) 127, BEREC common position on best practice in remedies on the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location imposed as a consequence of a position of significant market power in the relevant market, 8 December 2012, www.berec.europa.eu/files/document_register_store/2012/12/20121208163628_BoR_%2812%29_127_-_BEREC_COM MON_POSITION_ON_BEST_PRACTICE_IN_REMEDIES_ON_THE_MARKET_FOR_WHOLESALE.pdf.

519 In this respect the BEREC Common Position identifies the following competition issues: SMP operators may have an incentive to discriminate in favour of their own downstream operations in relation to the quality of wholesale access products. As a result, access products may not be of reasonable quality and service levels may not be comparable with those provided by the SMP operators to their own downstream businesses.
10.269 We consider, for the reasons set out above, that our decisions are consistent with the best practice set out in the BEREC Common Position.

10.270 We have also taken utmost account of the Costing and Non-discrimination Recommendation. In relation to SLAs and SLGs, the Costing and Non-discrimination Recommendation recommends that NRAs should require SMP operators to implement SLAs alongside KPIs, which should include SLGs in the case of a breach of the SLA. The approach we have adopted is consistent with this recommendation. The Costing and Non-discrimination Recommendation also indicates that SLG payments should, in principle, be made among operators without undue delay and through a pre-established process for payment and billing, and be sufficiently dissuasive, which is consistent with our decision to continue the application of the 2008 SLG Direction.

10.271 We note that Recital 24 of the Costing and Non-Discrimination Recommendation states that “NRAs should be closely involved in the development of SLAs, for instance, by approving the SLAs developed by the SMP operator as part of a regulatory Reference Offer”. We do not propose to approve the SLAs developed by the SMP operator as we consider it more appropriate to deal with disputes brought to us rather than to seek to undertake prior approval of individual SLAs.

**Requirement to notify charges (and terms and conditions where specified)**

**Current remedies**

10.272 BT and KCOM are currently required to give advanced notice before making changes to their charges for the provision of existing or new network access in each of the wholesale fixed access markets. In the WLA market, BT and KCOM are also required to notify changes to their terms and conditions. Table 10.18 details the relevant current SMP conditions.

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Existing SMP conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA</td>
<td>BT (in the UK excluding the Hull Area)</td>
</tr>
<tr>
<td></td>
<td>KCOM (in the Hull Area only)</td>
</tr>
<tr>
<td>WFAEL</td>
<td>SMP condition FAA6*</td>
</tr>
<tr>
<td>ISDN30</td>
<td>SMP condition AAAA6(a)</td>
</tr>
<tr>
<td>ISDN2</td>
<td>SMP condition AAA6(a)</td>
</tr>
</tbody>
</table>

* Condition includes requirement to notify terms and conditions

10.273 The notice period requirements of the existing SMP conditions is the same for BT and KCOM in each of the wholesale fixed access markets but they are different between each of WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets. Table 10.19 below details the specific notice periods imposed on BT and KCOM under the current SMP conditions by each of the wholesale fixed access markets.

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Table 10.19: Notice period requirements imposed on BT in the UK excluding the Hull Area and KCOM in the Hull Area under current SMP conditions, by market

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Relevant notice periods by market</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA</td>
<td>- a requirement to give 90 days’ notification for changes to charges, terms and conditions for existing products and services; and - a requirement to give 28 days’ notification for changes to charges, terms and conditions for new products and services.</td>
</tr>
<tr>
<td>WFAEL</td>
<td>- a requirement to give 90 days’ notification for changes to charges to the WLR rental Charge; and - a requirement to give 28 days’ notification for changes to charges in any other case.</td>
</tr>
<tr>
<td>ISDN30</td>
<td>- a requirement to give 28 days’ notification for changes to any charges.</td>
</tr>
<tr>
<td>ISDN2</td>
<td>- a requirement to give 90 days’ notification for changes to charges to the WLR (ISDN2) rental Charge; - a requirement to give 28 days’ notification for changes to charges in any other case.</td>
</tr>
</tbody>
</table>

Aim and effect of regulation

10.274 Notification of changes to charges at the wholesale level has the joint purpose of assisting transparency for the monitoring of potential anti-competitive behaviour and giving advance warning of charge changes to competing providers who buy wholesale access services. The latter purpose ensures that competing providers have sufficient time to plan for such changes as they may want to restructure the prices of their downstream offerings in response to charge changes at the wholesale level. Notification of changes therefore helps to ensure stability in markets, without which incentives to invest might be undermined and market entry made more difficult.

10.275 In certain circumstances it may also be appropriate to require the notification of changes to terms and conditions where this will also ensure transparency and provide advanced warning of changes to allow competing providers sufficient time to plan for them. Again this assists in providing stability in markets, without which incentives to invest might be undermined and market entry made more difficult.

10.276 This remedy complements the network access and non-discrimination requirements on dominant providers to address the competition concerns arising from a position of SMP in the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets.

Proposals as set out in the 2013 FAMR July Consultation

10.277 We proposed that notification conditions should apply to BT and KCOM in the following markets as shown in Table 10.20 below:
### Table 10.20: Proposed notification obligations

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Proposed notification conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BT (in the UK excluding the Hull Area)</td>
</tr>
<tr>
<td></td>
<td>KCOM (in the Hull Area only)</td>
</tr>
<tr>
<td>WLA</td>
<td>90 days’ notice for prices, terms and conditions relating to existing network access;</td>
</tr>
<tr>
<td></td>
<td>28 days’ notice for prices, terms and conditions relating to new service introductions; and</td>
</tr>
<tr>
<td></td>
<td>28 days’ notice for price reductions and associated conditions (for example conditions applied to special offers)</td>
</tr>
<tr>
<td></td>
<td>90 days’ notice for prices, terms and conditions relating to existing network access;</td>
</tr>
<tr>
<td></td>
<td>28 days’ notice for prices, terms and conditions relating to new service introductions; and</td>
</tr>
<tr>
<td></td>
<td>28 days’ notice for price reductions and associated conditions (for example conditions applied to special offers)</td>
</tr>
<tr>
<td>WFAEL</td>
<td>90 days’ notice for changes to the WLR charge; and</td>
</tr>
<tr>
<td></td>
<td>28 days’ notice for changes to charges for all other services</td>
</tr>
<tr>
<td>ISDN30</td>
<td>28 days’ notice for changes to charges for all services</td>
</tr>
<tr>
<td>ISDN2</td>
<td>28 days’ notice for changes to charges for all services</td>
</tr>
</tbody>
</table>

10.278 In the July 2013 FAMR Consultation we asked:

10.10 Do you agree with our proposals regarding requirements on BT and KCOM to notify changes to charges? Please provide reasons in support of your views.

**Stakeholder responses to the July 2013 FAMR Consultation**

10.279 KCOM accepted Ofcom’s proposals, insofar as they applied in the Hull Area, noting its broader question as to whether general remedies were still required for wholesale ISDN2 and wholesale ISDN30 markets in the Hull Area, which we have addressed in paragraph 10.34 above.

10.280 BT agreed with the proposed 28 day notice period for the introduction of new products and services in the WLA and WFAEL markets and with the 28 day notice period with regard to wholesale ISDN30 and wholesale ISDN2. BT also welcomed the proposal for decreasing the notice period for price reductions and associated conditions in the WLA market to 28 days but argued that we should apply the same notice period to the WLR rental charge as in the WFAEL market so that it could construct special offers for CPs using WLR+SMPF and MPF on similar timescales. BT further considered that there should be a common approach to the notice period for existing WLA and WLR non-rental products (90 days and 28 days respectively), commenting that changes to prices of product functionality common to both WLR and

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WLA would otherwise need to be notified using the longer WLA notification. BT suggested reducing the proposed 90 day notice period to 60 days.\textsuperscript{522}

10.281 EE agreed with Ofcom's proposed approach in relation to the WLA market and considered that our proposals "strike the right balance" between giving providers sufficient time to adjust their prices in the case of price increases and enabling price decreases and improved terms and conditions to be passed on to end-users. However, EE believed that the approach to the WFAEL market discriminated against WLR+SMPF based providers, and would likely put these providers at a "serious disadvantage" compared to MPF based providers as they would have more time to reflect any price increase in their downstream retail pricing. EE argued that the approach would therefore breach Ofcom's obligations not to discriminate against particular classes of CPs. EE also commented that, to the extent that Ofcom envisaged BT not being able to raise its current ISDN2 prices during the charge control period, it would be acceptable to reduce the notice period to 28 days.\textsuperscript{523}

10.282 EE did not agree with Ofcom's proposal to remove the obligation on BT to publish usage factors in its Access Charge Change Notifications ('ACCNs') or the obligation to send ACCNs to Ofcom based on its experience of BT publishing Network Charge Change Notifications ('NCCNs').\textsuperscript{524} EE’s objections were on the basis that sending Ofcom ACCNs or informing us in some manner of regulated price changes was appropriate in order for us to perform our compliance monitoring function and that it would ensure a greater degree of rigour in relation to the regulated price changes. EE alleged that, from time to time, BT had failed to publish NCCNs on its website.\textsuperscript{525}

10.283 Virgin, on the other hand, expressed concerns about the proposal to reduce the WLA price reduction notice period to 28 days, which it stated could have disruptive effects on industry. Virgin did not believe there was sufficient objective reasoning for the proposed change and suggested that the stakeholders that supported a shorter period in the 2012 FAMR Call for Inputs generally did so in the context of facilitating special offers. It noted that the current framework allowed for Ofcom to consent to any changes requested, which it suggested meant that consumers could benefit from shortened "pass through" times while industry had the opportunity to comment on the consent.\textsuperscript{526}

10.284 Verizon had "significant reservation" about any proposals to reduce the notification periods for price increases and the introduction of new wholesale products. However, with regard to our proposals for wholesale ISDN2, it considered that constraints imposed on SMP providers, such as charge controls, could mitigate the potential detriment that it felt a reduction in notice period could cause. Nevertheless, Verizon suggested a reduction to 45 days would be preferable over a reduction to 28 days.\textsuperscript{527}

\textsuperscript{522} Paragraphs 206-214, \textit{BT response to July 2013 FAMR Consultation}, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf}.

\textsuperscript{523} Pp.9-10, \textit{EE response to 2013 FAMR July Consultation}, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf}.

\textsuperscript{524} Pp.10-11, \textit{EE response to 2013 FAMR July Consultation}, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf}.

\textsuperscript{525} EE acknowledges that such apparent failures by BT have not been deliberate.\textsuperscript{526} P. 12, \textit{Virgin response to July 2013 FAMR Consultation}, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Virgin_Media.pdf}.

\textsuperscript{527} \textit{Paragraph 26, Verizon response to July 2013 FAMR Consultation}, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Verizon.pdf}.
10.285 [X] considered that downstream customers of ISDN2 services were more vulnerable to rapid changes in prices than consumers of IDSN30. [X] therefore suggested that Ofcom should reconsider reducing the notice period in relation to ISDN2 services straight down to 28 days, instead reducing it to 56 days half way through the review period.528

Proposals as set out in the January 2014 FAMR Consultation

10.286 In light of the responses from BT and EE about the need for consistency in charge change notification requirements as between WLR+SMPF and MPF, we considered that price reductions may also be relevant to the WFAEL market and we therefore set out further proposals for a 28 day notification period for reductions in the WLR rental charge in Section 3 of our January 2014 FAMR Consultation. We considered that this approach recognises the benefits to industry and end-users from shorter notification periods when prices are being reduced and that there is no risk of financial exposure for CPs. Price reductions can often be part of a special offer to which conditions are attached, so the shorter notice period would also apply to such conditions.529

10.287 We invited further comments from stakeholders on allowing a shorter notice period of 28 days for WLR rental charge reductions. We set out in Annex 7 to the January 2014 FAMR Consultation the changes to the proposed SMP conditions necessary to implement this change.

Stakeholder responses to the January 2014 FAMR Consultation

10.288 Both Openreach530 and EE531 agreed with our proposal to align the notification period for price reductions for WLR+SMPF and MPF. Virgin agreed with the need for consistency but maintained that changing the notice period from 90 days could be disruptive to industry and that we had not provided adequate explanation to justify the proposed change.532

Reasoning and decisions on requirements to notify charges (and terms and conditions where specified)

10.289 We consider that it is appropriate for BT and KCOM to be subject to an obligation to notify (by means of a written notice – an ACCN) changes to charges for wholesale network access products and services in each of the wholesale fixed access markets.

10.290 In addition, we consider that changes to terms and conditions for regulated NGA and CGA wholesale inputs in the WLA markets (such as VULA and LLU) could have material impacts on competitors. Requiring the notification of changes to terms and conditions...
conditions will ensure transparency and provide advanced warning of changes to allow competing providers sufficient time to plan for them. This assists in providing stability in markets, without which incentives to invest might be undermined and market entry made more difficult. We have therefore decided that it is appropriate to re-impose a requirement on BT and KCOM to give advanced notice of changes to terms and conditions (as well as charges) in relation to the provision of network access in the WLA market only.

10.291 We recognise that there may be some disadvantages to charge change notifications, particularly in markets where there is some competition. It can lead to a ‘chilling’ effect where other CPs follow BT’s or KCOM’s prices rather than act dynamically to set competitive prices. However, on balance we do not consider that this consideration undermines the rationale for imposing a notification of charges condition on dominant providers to address competition concerns arising from findings of SMP in the wholesale fixed access markets. Each of WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets, whether in the UK excluding the Hull Area or the Hull Area, is characterised\textsuperscript{533} by a high level of reliance by competitors on the provision of wholesale access products and services to enable them to compete in downstream markets. We therefore consider that the advantages of notifying charges are likely to outweigh any potential disadvantages.

10.292 We have decided that an ACCN must include the following:

- a description of the network access in question;
- a reference as to where the terms and conditions associated with the network access in question can be found in the dominant provider’s Reference Offer;
- the date on which the new charges take effect (or the period over which the new charges will apply);
- the current and proposed charge; and
- other charges for services that would be directly affected by the proposed charge.

10.293 We consider that the requirement on BT and KCOM to include in their ACCNs an amount applied to each network component with the relevant usage factors reconciled in each case to both the existing and proposed charge payable by a CP is no longer necessary. We no longer consider that this information is required in ACCNs in line with our decision in the 2013 Narrowband Statement. BT and KCOM are required to publish the FAC of certain regulated wholesale products based on component costs and usage factors in their respective RFS. Therefore, EE and other CPs will continue to have access to this level of detail through BT and KCOM’s published RFS.

10.294 Both BT and KCOM publish notifications (ACCNs) of changes to prices and, where relevant, terms and conditions on their respective company websites. In light of this practice we therefore do not consider it appropriate to continue to require BT and KCOM to additionally send ACCNs to Ofcom.

\textsuperscript{533} Or likely to be characterised as such in the WLA market in the Hull Area.
10.295 However, we consider it appropriate that BT and KCOM continue to be required to send Ofcom internal ACCNs to provide us with transparency with particular regard to the non-discrimination remedies which we impose in the wholesale fixed access markets. These changes are consistent with the approach in the 2013 Narrowband Statement.534

10.296 In relation to EE’s points about sending ACCN’s to Ofcom, we do not consider that our ability to conduct compliance activities is in any way impaired by removing the requirement on BT and KCOM to routinely send us copies of certain ACCNs. In particular, should we require such information (which, as we explained, is published on BT and KCOM’s respective websites) in relation to compliance concerns, we have the power to require the provision of the relevant information under our statutory information gathering powers. We further do not agree with EE’s argument that absent the “rigour” of a requirement to routinely send certain ACCNs to Ofcom, BT and KCOM are more likely (whether deliberate or otherwise) to fail to comply with their obligation to publish ACCNs.

10.297 We now turn to our reasoning and decisions in relation to the specific requirements for notice periods in each of the wholesale fixed access markets.

Notice periods in the WLA market

10.298 In the WLA market, we consider that the notification period should allow sufficient time for other CPs to make necessary changes to their downstream products and services and that 90 days would ordinarily be an appropriate notification period for existing products and services.

10.299 In relation to BT’s position that WLA notification periods should be reduced to 60 days, underlying BT’s view appears to be the logic that both LLU and WLR are based on its copper access network and, therefore, operationally it makes sense to align these products. We recognise this point. However, LLU and WLR are specific remedies that aim to address BT’s SMP in separate economic markets – WLA and WFAEL respectively. We therefore need to ensure that the regulatory approach that we adopt in each market adequately addresses the competition issues which have been identified.

10.300 The investment required to use LLU is significantly higher than that associated with WLR. LLU requires CPs to build and operate more complex networks than WLR. LLU is also more complex in that it can be used to serve multiple downstream markets, for example, voice, broadband and potentially parts of the leased lines market. This means that LLU price increases are likely to have a more significant impact on CPs who buy LLU and the markets they are serving compared with WLR. We therefore consider that, generally, CPs who use LLU will require more time to respond to any price increases to the wholesale inputs (LLU) that they buy. For this reason, we have decided to maintain the 90 day price notification period for price increases.

10.301 We would however note that we are able to consent to modifications to this, on a case-by-case basis. Thus if there is a general industry need to have a shorter notice period in a given situation, we are able to accommodate this.

10.302 However, we recognise that the industry and end-users could benefit from shorter notification periods when prices are being reduced, and note that there may be advantages in having a shorter notification period for price incentives to encourage migration to newer or more efficient NGA services in the WLA market in particular. There should also not be a risk of financial exposure for CPs where prices are being reduced.

10.303 We disagree with the comments made by Virgin. In the light of the responses we have received from other stakeholders, it is not evident that Virgin’s concerns regarding disruption to industry are shared by providers who buy WLA products and services.

10.304 We therefore consider 28 days to be an appropriate notification period for price reductions for access products and services in the WLA market. Price reductions can often be part of a special offer to which conditions are attached, so the shorter notice period would also apply to such conditions.535

10.305 Finally, we consider that the prior notification period for new products and services should reflect the lesser administrative impact of changes to charges for new products and services. We consider that 28 days remains an appropriate notification period for new products and services in the WLA market.

Notice periods in the WFAEL market

10.306 In light of our assessment of the WFAEL market, we consider that a 90 day notification period for increases in BT and KCOM’s WLR rental charge provides CPs with the protection they need in respect of the ongoing monthly charge while a reduced notification of 28 days for all other services provides flexibility.

10.307 However, we consider that providing for shorter notification periods for price reductions in the WFAEL market (in addition to and consistent with the WLA market) is appropriate and recognises the benefits to industry and end-users in passing through price reductions more quickly. We also do not consider that this approach to price reductions will give rise to concerns regarding CPs’ financial exposure. We disagree with Virgin’s view that there is a significant concern that this approach could be disruptive to industry and consider that this is not a view widely shared by wholesale buyers of WLR.

10.308 In relation to our reasoning and decisions regarding notice periods in WFAEL, we also refer to BT’s comments about different notification periods for price increases between existing WLA and WLR products and our response to these comments in paragraphs 10.299 to 10.301 above.

Notice periods in the wholesale ISDN30 market

10.309 We note with regard to the wholesale ISDN30 market that we have imposed a notice period of 28 days since 2003. Our assessment of this declining market has not provided any basis for considering any change to this requirement. Further, no

535 We further consider that a 28 day notice period should apply to any increase in prices that may occur at the end of a special offer (where the price immediately following the end of the special offer is no higher than the price immediately before the start of the special offer).
stakeholders disagreed with our proposal to retain a notice period of 28 days for
changes to wholesale ISDN30 charges.536

10.310 We therefore consider that the existing notification periods remain appropriate.

**Notice periods in the wholesale ISDN2 market**

10.311 In common with ISDN30, ISDN2 is also a declining market and we have also had
particular regard to our approach for addressing excessive pricing. Whereas charges
for wholesale ISDN2 access products were previously subject to a cost orientation
requirement, we have now imposed a charge control on BT that will hold charges at
their current level (as detailed in Section 17). We consider that in addition to
addressing the incentive and ability of the dominant provider to charge excessive
wholesale prices, this remedy will bring greater pricing certainty, predictability and
stability over the period of this review, noting stakeholders’ concerns about past price
changes. We consider that this greater pricing certainty is one reason why it is
appropriate to reduce the regulatory requirement to give notice of price changes from
90 days to 28 days. We have therefore reduced the notice period imposed on BT for
notifying changes to wholesale ISDN2 charges from 90 days to 28 days.

10.312 In relation to KCOM, we have not imposed a charge control (although it is subject to
a fair and reasonable charges obligation). However, we consider that 28 days is the
minimum period required to allow charges to be reflected in downstream offers based
on ISDN2, not least given this aligns the notice period with that in the wholesale
ISDN30 market.

10.313 In relation to the points made by Verizon and [9], we explained in the July 2013
FAMR Consultation that there were specific circumstances surrounding our decision
to apply a notice period of 56 days for changes to wholesale call origination charges
in the 2013 Narrowband Statement and that we did not see any similarities with our
consideration of appropriate notice periods in the wholesale fixed access markets.
Noting this exception, we have generally set periods of notice for access products at
90 days or 28 days, dependent upon what is appropriate in the relevant market. This
is consistent with the approach set out in the Access Guidelines.537

10.314 We are therefore satisfied that 28 days is the minimum period required to allow
changes to be reflected in downstream offers based on ISDN2. We do not therefore
consider requiring dominant providers to give longer notice periods, whether 90 days
or some other period between 28 and 90 days as suggested by some CPs, of
changes to their wholesale ISDN2 charges is proportionate in the circumstances we
have described.

**Decisions on requirements to notify charges (and terms and conditions where
specified)**

10.315 For the reasons set out above, we have therefore decided that notification conditions
should apply to BT and KCOM in the following markets as shown in Table 10.21
below:

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536 Noting KCOM’s broader question as to the value of imposing general remedies on wholesale ISDN2 and
wholesale ISDN30 in the Hull Area, which we address as paragraph 10.34.

537 Annex 3, Oftel, *Imposing access obligations under the new EU Directives*, 13 September 2002,
### Table 10.21: Decisions on notification obligations

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>BT (in the UK excluding the Hull Area)</th>
<th>KCOM (in the Hull Area only)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WLA</strong></td>
<td>90 days’ notice for prices, terms and conditions relating to existing network access; 28 days’ notice for prices, terms and conditions relating to new service introductions; and 28 days’ notice for price reductions and associated conditions (for example conditions applied to special offers) and the end of temporary price reductions</td>
<td>90 days’ notice for prices, terms and conditions relating to existing network access; 28 days’ notice for prices, terms and conditions relating to new service introductions; and 28 days’ notice for price reductions and associated conditions (for example conditions applied to special offers) and the end of temporary price reductions</td>
</tr>
<tr>
<td><strong>WFAEL</strong></td>
<td>90 days’ notice for changes to the WLR rental charge; 28 days’ notice for price reductions and price changes relating to the end of a temporary price reduction (both in relation to WLR rental charges); and 28 days’ notice for changes to charges for all other services</td>
<td>90 days’ notice for changes to the WLR rental charge; 28 days’ notice for price reductions and price changes relating to the end of a temporary price reduction (both in relation to WLR rental charges); and 28 days’ notice for changes to charges for all other services</td>
</tr>
<tr>
<td><strong>ISDN30</strong></td>
<td>28 days’ notice for changes to charges for all services</td>
<td>28 days’ notice for changes to charges for all services</td>
</tr>
<tr>
<td><strong>ISDN2</strong></td>
<td>28 days’ notice for changes to charges for all services</td>
<td>28 days’ notice for changes to charges for all services</td>
</tr>
</tbody>
</table>

#### Legal tests

10.316 For the reasons set out below, we are satisfied that the SMP conditions for BT in respect of each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the UK excluding the Hull Area and for KCOM in the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets for the Hull Area (respectively in Annex 29) meet the various tests set out in the CA03.

10.317 As explained above, sections 87(6)(b) and (c) authorise the SMP condition we have decided to impose.

10.318 We have also considered our duties under the CA03, including our general duties under section 3, and all the Community requirements set out in section 4, of the CA03. We note, in particular, that the condition is aimed at promoting competition and securing efficiency and sustainable competition for the maximum benefit of consumers by ensuring that CPs have the necessary information about changes to terms, conditions and charges sufficiently in advance to allow them to make informed decisions about competing in downstream markets.

10.319 Section 47(2) of the CA03 requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable, in that there are clear benefits from the notification of changes in terms of ensuring that providers are able to make informed decisions within an appropriate time frame about competing in downstream markets, while
such notification also helps with the monitoring of potential anti-competitive behaviour;

- not unduly discriminatory, in that it applies to both BT and KCOM, which are the only CPs which we have found have SMP in the relevant markets in the UK excluding the Hull Area and the Hull Area respectively;

- proportionate, in that only information that other CPs would need to know in order to adjust for any changes would have to be notified. Notification periods are the minimum required to allow changes to be reflected in downstream offers which are appropriate to the competitive conditions we find in each wholesale market; and

- transparent, in that the condition is clear in its intention and implementation.

10.320 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the CA03.

Requirement to notify technical information

Current remedies

10.321 BT and KCOM are currently subject to a requirement to publish, in advance, changes to technical information in each of the wholesale fixed access markets.

10.322 Table 10.22 details the relevant current SMP conditions.

Table 10.22: Current SMP conditions concerning the requirement to notify technical information

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Existing SMP conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA</td>
<td>BT (in the UK excluding the Hull Area)</td>
</tr>
<tr>
<td>WFAEL</td>
<td>SMP condition FAA7</td>
</tr>
<tr>
<td>ISDN30</td>
<td>SMP condition AAAA6(b)</td>
</tr>
<tr>
<td>ISDN2</td>
<td>SMP condition AAA6(b)</td>
</tr>
</tbody>
</table>

Aim and effect of regulation

10.323 Complementary to the above requirement to publish a Reference Offer which includes technical information, the aim of this regulation is to provide advanced notification of technical characteristics to ensure that competing providers have sufficient time to respond to changes that may affect them. For example, a competing provider may need to introduce new equipment or modify existing equipment or systems to support a new or changed technical interface. Similarly, a competing provider may need to make changes to its network in order to support changes in the points of network access or configuration.

10.324 This remedy complements the network access and non-discrimination requirements on dominant providers to address the competition concerns arising from a position of SMP in the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets.

Proposals as set out in the July 2013 FAMR Consultation

10.325 We proposed that technical notification conditions should apply to BT and KCOM in the following markets as shown in Table 10.23 below:
Table 10.23: Proposed technical notification obligations

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Proposed technical notification conditions</th>
<th>KCOM (in the Hull Area only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>WFAEL</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN30</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN2</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

10.326 In the July 2013 FAMR Consultation we asked:

10.11 Do you agree with our proposals regarding requirements on BT and KCOM to notify technical information? Please provide reasons in support of your views.

Stakeholder responses to the July 2013 FAMR Consultation

10.327 All the stakeholders that provided a response to this question broadly agreed with the proposals regarding requirements on BT and KCOM to notify technical information in advance of providing new wholesale services or amending existing technical terms and conditions. Virgin noted our proposal to take account of changes under the Network Interoperability Consultative Committee (‘NICC’).538 process.539

10.328 BT noted that it should not be precluded from implementing technical changes in a timely manner subject to adequate notice being given to CPs.540 KCOM accepted the proposed requirement to notify technical information.541

Reasoning and decisions on the notification of technical information

10.329 We have decided to impose conditions on BT and KCOM to notify technical information in advance of providing new wholesale services or amending existing technical terms and conditions. We consider that it is appropriate to impose this requirement on both BT and KCOM in each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in which we find them to have SMP because it enables providers who compete in downstream markets to make effective use of BT and KCOM’s wholesale services.

10.330 Technical information includes new or amended technical characteristics, including information on network configuration, locations of the points of network access and technical standards (including any usage restrictions and other security issues). Relevant information about network configuration is likely to include information about the function and connectivity of points of access, for example, the connectivity of exchanges to end-users and other exchanges. Technical information also includes the information provided currently in the Network Information Publication Principles

538 NICC is a technical forum for the UK communications sector that develops interoperability standards for public communications networks and services in the UK. See http://www.niccstandards.org.uk/.
('NIPP') and Access Network Facilities ('ANF') agreement and also includes any other additional information necessary to make use of services provided, in particular, in the WLA market.

10.331 We note that all CPs (irrespective of markets and market power) are required to comply with General Condition 2 of the general conditions of entitlement.\textsuperscript{542} This general condition obliges CPs to apply compulsory standards or, in the absence of these, to take full account of any relevant voluntary standards. Where appropriate, UK technical interoperability issues should be developed and agreed through the NICC. Where the NICC process applies to network changes notified under this condition, this should take place before the minimum 90 day notification. We have therefore included a provision in the SMP services condition in Annex 29 which exempts the application of this obligation in respect of NICC technical specifications.

10.332 The existing conditions require the notification of new technical information within a reasonable period of time but not less than 90 days in advance of providing new wholesale services or amending existing technical terms and conditions. We consider that 90 days remains an appropriate minimum period.

10.333 We also consider that the requirement to give notification within a reasonable time period may mean that a period of notification in excess of 90 days may also be appropriate in certain circumstances. For example, if BT or KCOM were to make a major change to their technical terms and conditions, a period of more than the 90 day minimum notification period may be necessary in order to enable competing providers who buy affected wholesale services sufficient time to prepare and support such changes without disruption and detriment to their businesses and customers.

10.334 We note BT’s comments that it should not be precluded from implementing technical changes in a timely manner subject to adequate notice. However, BT did not offer any reasoning to suggest that 90 days was in any way inappropriate in order to implement changes in a timely manner.

Decisions on the notification of technical information

10.335 We have therefore decided that a requirement to notify technical information should apply to BT and KCOM in the following markets as shown in Table 10.24 below:

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Technical notification SMP conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA</td>
<td>BT (in the UK excluding the Hull Area)</td>
</tr>
<tr>
<td>WFAEL</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN30</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN2</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Legal tests

10.336 For the reasons set out below, we are satisfied that the SMP conditions for BT in respect of each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2

\textsuperscript{542} Ofcom, \textit{Consolidated version of the General Conditions as at 22 November 2012 including annotations}, 22 November 2012, \url{http://stakeholders.ofcom.org.uk/binaries/telecoms/ga/general-conditions22nov12.pdf}. 

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markets in the UK excluding the Hull Area and for KCOM in the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets for the Hull Area (respectively in Annex 29) meet the various tests set out in the CA03.

10.337 As explained above, sections 87(6)(b) and (c) authorise the SMP conditions we have decided to impose.

10.338 We consider that, by ensuring that other CPs are given sufficient time to make any changes to technical specifications that might affect their businesses, the condition in particular furthers the interests of consumers in relevant markets by the promotion of competition in line with section 3 of the CA03.

10.339 Further, we consider that, in line with section 4 of the CA03, the condition in particular promotes competition in relation to the provision of electronic communications networks and encourages the provision of network access and service interoperability for the purposes of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers.

10.340 We consider that the condition meets the criteria set out in section 47(2) of the CA03. It is:

- objectively justifiable, in that it enables competing CPs to make full and effective use of network access. The period allows CPs time to react to proposed changes without imposing an unnecessarily long notification period on BT and KCOM that may restrict their ability to develop and deploy new features or products;

- not unduly discriminatory, in that it applies to both BT and KCOM, which are the only CPs which we have found have SMP in the relevant markets in the UK excluding the Hull Area and the Hull Area respectively;

- proportionate, in that 90 days is considered the minimum period necessary to allow competing CPs to modify their networks; and

- transparent, in that it is clear in its intention that BT and KCOM notify technical information.

10.341 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the CA03.

**Requirements for cost accounting**

**Current remedies**

10.342 BT and KCOM are currently subject to cost accounting obligations as set out in Table 10.25 below.
### Table 10.25: Current Cost Accounting obligation

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Existing cost accounting obligation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT (in the UK excluding the Hull Area)</td>
<td>Yes</td>
</tr>
<tr>
<td>KCOM (in the Hull Area only)</td>
<td>No</td>
</tr>
<tr>
<td>WLA</td>
<td>Yes</td>
</tr>
<tr>
<td>WFAEL</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN30</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN2</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Aim and effect of regulation

10.343 In the July 2013 FAMR Consultation we explained that the imposition of a cost accounting obligation on dominant providers is an important means of ensuring that:

- we have the necessary information to support the monitoring of the effectiveness of pricing remedies, in particular to ensure that the pricing remedies we impose continue to address the competition problems identified and to enable our timely intervention should such intervention ultimately be needed;

- wholesale costs are attributed across the wholesale markets (and the individual services within them) in a consistent manner. This mitigates in particular against the risk of double recovery of costs or that costs might be loaded onto particular products or markets;

- publication (i.e. reporting) of cost accounting information aids transparency, providing reasonable confidence to stakeholders about compliance with SMP obligations, allowing stakeholders to monitor compliance and more generally enabling stakeholders to make better informed contributions to the development of the regulatory framework; and

- BT records all information necessary for the purposes listed above at the time that relevant transactions occur, on an ongoing basis. Absent such a requirement, there is a strong possibility that the necessary information would not be available when it is required and in the necessary form and manner.

### Proposals as set out in the July 2013 FAMR Consultation

10.344 We proposed that a cost accounting requirement should apply to BT in the following markets as shown in Table 10.26 below (with no requirements for KCOM).

### Table 10.26: Proposed Cost Accounting obligation

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Proposed cost accounting obligation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT (in the UK excluding the Hull Area)</td>
<td>Yes</td>
</tr>
<tr>
<td>KCOM (in the Hull Area only)</td>
<td>No</td>
</tr>
<tr>
<td>WLA</td>
<td>Yes</td>
</tr>
<tr>
<td>WFAEL</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN30</td>
<td>Yes</td>
</tr>
<tr>
<td>ISDN2</td>
<td>Yes</td>
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</tbody>
</table>

10.345 In the July 2013 FAMR Consultation we asked:
10.22 Do you agree with our proposals regarding requirements on BT in relation to cost accounting and not to impose cost accounting requirements on KCOM? Please provide reasons in support of your views.

Regulatory Financial Reporting

10.346 On 20 December 2013 we published our proposals to change the framework for BT’s regulatory financial reporting from the current framework which was first implemented in 2004.543

10.347 These proposals amended those set out in the July 2013 FAMR Consultation in relation to a regulatory accounting obligation on BT in the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the UK excluding the Hull Area.544 In particular, we proposed to apply to BT a new regulatory accounting condition in these markets. We proposed no changes to the SMP condition relating to KCOM’s regulatory accounting obligations.

Stakeholder responses to the July 2013 FAMR Consultation

10.348 Vodafone noted that it would respond to this issue in Ofcom’s separate consultation on accounting reform545, while Verizon agreed with Ofcom’s proposals.546

10.349 EE did not believe that the proposals addressed the concerns it expressed in response to the 2012 FAMR Call for Inputs, but otherwise agreed with the proposals.547

10.350 KCOM welcomed Ofcom’s proposal not to impose a cost accounting requirement on KCOM.548

10.351 BT suggested that the obligation should be implemented in a way that was proportionate to the value of the services concerned and linked to any other remedies imposed. BT set out two specific concerns about how this obligation would be implemented:

547 P.14, EE response to July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/Accounting-Reform/response/EE.pdf. In response to the 2012 FAMR Call for inputs, EE considered that the general remedies needed to be strengthened to ensure that, above an appropriate threshold, Openreach provided greater disclosure regarding the breakdown of costs which were ultimately borne by its wholesale customers through the charges they paid for BT’s regulated access products. EE gave the example of charges for printed directories which were of extremely high value but appeared as a single line item in BT’s published regulatory accounts.
• in relation to the proposals for the maintenance of Distributed Standalone Costs (‘DSAC’) and Distributed Long Run Incremental Costs (‘DLRIC’) information where no Basis of charges obligation was imposed; and

• with regard to the usefulness of cost accounting information for ISDN2 and ISDN30 services.549

10.352 BT expanded on these concerns in response to our specific questions on product-specific cost accounting obligations and we set out our consideration of BT’s points in these later sections (see cross-references in paragraph 10.366 below).

10.353 With regard to the Hull Area, [X] commented that Ofcom could request a restatement of KCOM’s accounts under sections 135 or 191 of the CA03 if required. Regarding BT, [X] considered that a cost accounting requirement was increasingly important to ensure there was sufficient transparency and oversight of whether BT was meeting its regulatory obligations, as [X] perceived Ofcom to increasingly be using ex-post remedies in preference to ex-ante price controls. It therefore agreed with the position EE set out in its response to the 2012 FAMR Call for Inputs that, if anything, the cost accounting requirement on BT needed to be strengthened.550

Reasoning and decisions on cost accounting obligations

10.354 We set out below our reasoning, decisions and legal tests for imposing this new SMP condition in respect of cost accounting obligations on BT in the light of the competition problems we have identified in the wholesale fixed access markets. We cross refer, where appropriate, to the 2014 Regulatory Financial Reporting Statement551, which sets out our considerations (in light of stakeholder responses to our proposals) and conclusions on the policy changes to BT’s regulatory financial reporting framework and also our reasoning in relation to the specific form of the SMP condition we are imposing on BT.

10.355 Sections 87(9) to (11) (subject to section 88) of the CA03 authorises Ofcom to impose appropriate cost accounting obligations on dominant providers, in relation to matters connected with the provision of network access to, or with the availability of, relevant facilities. Cost accounting rules may be made in relation to price controls, such as fair and reasonable charges, charge controls, the recovery of costs and Basis of charges (also known as cost orientation).

10.356 We refer to the 2014 Regulatory Financial Reporting Statement in which we set out our reasoning and decisions on the specific form of cost accounting requirement we are imposing on BT in these markets.

10.357 We are imposing a cost accounting requirement on BT in each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in which we have found that it has SMP. We consider that this obligation is necessary to ensure that we are provided with the information that we require to allow us to effectively monitor compliance with other SMP conditions and to enable our timely intervention to ensure that those other

SMP obligations continue to effectively address the underlying competition problems identified in our market analysis.

10.358 Our specific decisions regarding pricing remedies in respect of each of the wholesale fixed access markets and our views on what specific cost accounting requirements we have decided are appropriate to complement these remedies are set out in the Sections 13, 15, 17 and 18. In accordance with our usual practice, we will issue a Direction implementing the specifics of our policy intentions pursuant to the cost accounting requirement we impose in this document as part of our annual review.

10.359 With respect to KCOM, we have decided against imposing a Basis of charges requirement or other pricing remedies other than a requirement to provide network access on fair and reasonable terms including charges. This decision is set out in paragraphs 10.41. We do not consider that it would be proportionate to impose cost accounting requirements on KCOM on the basis of fair and reasonable charges in any of the wholesale fixed access markets in the Hull Area.

10.360 We note that while EE supported our cost accounting proposals in the July 2013 FAMR Consultation, it nevertheless considered that we had not addressed the concerns it originally set out in its response to the 2012 FAMR Call for Inputs. EE did not make any further comment setting out in what respect we had not addressed its concerns.

10.361 In response to the 2012 FAMR Call for Inputs, EE proposed that cost accounting remedies need to be strengthened to ensure that, above an appropriate threshold, Openreach provides greater disclosure regarding the breakdown of costs which are ultimately borne by its wholesale customers through the charges they pay for BT’s regulated access products. We understood that EE’s proposal raised a broader point (i.e. not limited to cost accounting remedies in fixed access markets) which we said we would consider in our review of regulatory reporting requirements. The 2014 Regulatory Financial Reporting Statement more generally addresses this point.

10.362 We note references to our information gathering powers in the CA03. We consider that we have applied the appropriate pricing remedies to address the competition concerns identified and in doing so we continue to recognise the importance of cost accounting to underpin our approach. We consider that general point on strengthening the cost accounting provisions has also been addressed in the 2014 Regulatory Financial Reporting Statement.

Decisions on cost accounting obligations

10.363 We have therefore decided a that cost accounting obligation should apply to BT (but not KCOM) in the following markets as shown in Table 10.27 below:

552 In applying the tests set out in section 88 of the CA03, we consider cost accounting requirements together with our pricing remedies in the subsequent sections.
Table 10.27: Decisions on Cost Accounting obligation

<table>
<thead>
<tr>
<th>Wholesale market</th>
<th>Cost accounting obligation</th>
<th>KCOM (in the Hull Area only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>WFAEL</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>ISDN30</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>ISDN2</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Legal tests

10.364 For the reasons set out below, we are satisfied that the cost accounting requirement for BT in respect of each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the UK excluding the Hull Area (in Annex 29) meets the various tests set out in the CA03.

10.365 Section 87(9)(c) authorises conditions imposing such rules as we may make for the purposes of matters connected with the provision of network access to the relevant network, or with the availability of relevant facilities about the use of cost accounting systems. Such conditions include requiring the application of presumptions in the fixing and determination of costs and charges for the purposes of the price controls, rules and obligations imposed by virtue of that subsection (section 87(10)). Where such conditions are imposed, section 87(11) imposes a duty on us also to set an SMP condition which imposes an obligation to make arrangements for a description to be made available to the public of the cost accounting system used in pursuance of that condition; and to include in that description details of (i) the main categories under which costs are brought into account for the purposes of that system, and (ii) the rules applied for the purposes of that system with respect to the allocation of costs. In setting such conditions, we must be satisfied that the conditions about network access pricing set out in section 88 are also satisfied.

10.366 Below we list the various Basis of charges obligations and charge controls obligations we have decided to impose on BT. At the paragraphs referenced below, we have set out how our decisions meet the conditions in section 88, in that they would address the risk of excessive pricing and promote efficiency and sustainable competition, to the benefit of end-users, and would not undermine investment by BT. We are imposing on BT:

- fair and reasonable charges obligation in the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets, to the extent applicable, see paragraphs 10.79 to 10.83;
- a charge control on GEA migrations in the WLA market, see paragraphs 12.216 to 12.218;
- a Basis of charges obligation relating to SLU services in the WLA market, see paragraph 12.341;
- a Basis of charges obligation relating to PIA services in the WLA market, see paragraphs 12.413;
- a Basis of charges obligation on Electricity charges in the WLA market, see paragraph 13.68; and
charge controls on LLU, WLR, wholesale ISDN2 and wholesale ISDN30 exchange line services in the WLA, WFAEL, wholesale ISDN2 and wholesale ISDN30 markets respectively (including charge controls on TRCs in the WLA, WFAEL, wholesale ISDN2 and wholesale ISDN30 markets and on SFIs in the WLA market), see paragraphs 19.52 to 19.67.

10.367 We consider that imposing a cost accounting obligation would not undermine investment in any of the wholesale fixed access markets, and that imposing a cost accounting obligation is consistent with section 88.

10.368 We consider that the condition fulfils our duty under section 87(11) in that the cost accounting condition requires the publication of a description of the cost accounting system used and the main categories of cost and the cost allocation rules applied.

10.369 We have considered our statutory obligations and the Community requirements set out in sections 3 and 4 of the CA03. In particular, we consider that the imposition of the cost accounting obligation is justifiable and proportionate to promote competition in relation to the provision of electronic communications networks and services, and to ensure the provision of network access (including supporting ancillary services) and service interoperability for the purpose of securing efficiency and sustainable competition and the maximum benefit for the persons who are customers of CPs. This is because the imposition of the obligation will ensure that other obligations designed to curb potentially damaging leverage of market power – in particular the setting of prices at excessive levels – can be effectively monitored and enforced.

10.370 We have considered the Community requirements set out in section 4 of the CA03 and believe that the cost accounting obligations in particular promote competition in relation to the provision of electronic communications networks and encourage the provision of network access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers.

10.371 We consider that the condition meets the criteria set out in section 47(2) of the CA03 because it is:

- objectively justifiable, in that it is necessary to ensure the appropriate maintenance and provision of accounts in order to monitor BT’s activities with regard to the pricing remedies we propose in each of these markets. It also relates to the need to ensure competition develops fairly, to the benefit of consumers, by providing transparency of BT’s compliance with rules set to address the risk of excessive pricing;

- non-discriminatory, in that BT is the only CP on which we impose specific pricing remedies in the UK excluding the Hull Area and we do not consider that it is proportionate to impose cost accounting requirements on KCOM in the Hull Area;

- proportionate, in that only information that is no more than necessary to monitor BT’s activities with regard to the pricing remedies we propose is required to be maintained and provided; and

- transparent, in that it is clear in its intention to ensure the appropriate maintenance and provision of accounts for the purposes set out above and the particular cost accounting requirements on BT are clearly documented.
10.372 In our 2014 Regulatory Financial Reporting Statement we provide further detail as to how the specific form of cost accounting requirements we have decided to impose on BT (in the form of the SMP conditions in Annex 29) meet the relevant legal tests. This reasoning supplements the considerations set out above.

10.373 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the CA03.
Section 11

Remedies: Quality of Service

Introduction

11.1 As part of our review of the fixed access markets we have undertaken a review of matters relating to QoS delivered by BT (through Openreach) in the supply of regulated wholesale fixed access services. The review was prompted by evidence of a decline in performance in 2012 and 2010 as well as concerns from CPs about the effectiveness of the current regulatory and contractual framework in incentivising BT to deliver a good performance on a consistent basis.

11.2 We have concluded that the current regulatory and contractual arrangements have not been sufficient to ensure that BT maintains its quality of service in the supply of WLR and MPF services to a sufficiently high level to prevent material detriment to downstream competition in the fixed access markets.

11.3 Consequently we have decided to implement the following measures to address these concerns:

- minimum standards for LLU and WLR repair and provision; and
- enhanced reporting and publication of KPIs for LLU, WLR, GEA and ISDN services;

11.4 Alongside this we have set out what we consider to be the appropriate process for future contract negotiations with a clearly defined role for the OTA2 and Ofcom.

11.5 In this section we set out our analysis and the basis for these decisions.

Structure of this section

11.6 This section covers three main topics:

- **minimum standards for quality of service**: our review of BT’s quality of service and our analysis and conclusions concerning the introduction of a condition setting minimum standards for WLR and MPF services. This part is further subdivided as follows:
  - **our review of BT’s quality of service**: covering our assessment of: BT’s quality of service, BT’s incentives to provide an adequate quality of service and the impact of poor quality of service on competition and consumers;
  - **our assessment of the case for minimum standards**: including our assessment of the services that should be subject to minimum standards, the measures that should form the basis of the minimum standards and whether there should be national or regional targets;
  - **the cost implications of minimum standards**: our assessment of the cost implications of minimum standards and of Openreach’s resource estimates for service quality improvements;
o **the level of the minimum standards**: our assessment of the level of the minimum standards, including our assessment of how MBORC should be taken into account in the minimum standards; and

o **enforcement and penalty guidelines**: our consideration of stakeholders requests for us to provide more detailed guidance concerning our approach to enforcement and penalties for breaches of the minimum standards;

- **SLA/SLG negotiation arrangements**: our conclusions concerning the revised arrangements that should apply to SLA/SLG negotiations arrangements in future; and.

- **transparency as to QoS**: our analysis and conclusions concerning a direction requiring BT to produce a set of KPIs to provide transparency about its quality of service.

**Our review of BT’s quality of service**

11.7 A set out in Section 10, we have decided in this review to maintain the requirement on BT to provide network access to third party CPs on fair and reasonable terms, conditions and charges and on the terms conditions and charges of the relevant reference offer, which must include service level commitments and service level guarantees.\(^{553}\) There is, however, currently no regulatory requirement on BT to provide such network access by reference to a specific service standard.

11.8 We have therefore undertaken a review of matters relating to the QoS delivered by BT (through Openreach) in the supply of regulated wholesale fixed access services, with a view to assessing whether there is a need to set a specific service standard. The review was prompted by evidence of a decline in performance in 2010 and 2012, as well as concerns from CPs about the effectiveness of the current regulatory and contractual framework in incentivising BT to deliver a good performance on a consistent basis.

11.9 The provision of network access on fair and reasonable terms is critical to addressing SMP at the wholesale level which in turn ensures that the effectiveness of downstream retail competition. This is recognised in the BEREC Common Position which identifies as a competition issue that arises frequently that SMP operators may have an incentive to favour their own downstream operations in relation to the quality of wholesale access products with the effect that access products may not be of reasonable quality and service levels may not be comparable with those provided to the SMP operator’s downstream businesses. If the standard of provision is below that expected by end-users it has the potential to directly impact competition in the access markets.

11.10 As part of the 2012 FAMR Call for Inputs we sought stakeholders’ comments on their experience of Openreach’s QoS, the current incentives facing Openreach and its

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\(^{553}\) Further, in 2008 we set Directions covering, among other things, WLR (analogue and digital) and LLU, which required BT to amend certain SLGs that it offered and to pay compensation to CPs proactively for service failures.
customers regarding service quality, and the potential implications for future regulation.\textsuperscript{554}

11.11 In the July 2013 FAMR Consultation we summarised comments made by respondents to the 2012 FAMR Call for Inputs and set out the results of our analysis, which included our review of recent performance, the reasons for the decline in performance, the impact of poor service performance and our research on the views of consumers and SMEs on what constitutes good or reasonable service quality.

11.12 We explained that we had been concerned about the level of service provided by Openreach on a number of occasions in the last few years. While performance in 2012 may be considered due in part to exceptional circumstances, there had been a steady decline in the level of service provided by Openreach since at least 2009.

11.13 Our analysis indicated that various factors may have contributed to the decline, such as increased fault rates (due to weather conditions and increased use of lines for broadband services) and changes in the mix of services provided by Openreach. However, we also noted that the reductions in field engineering resources from 2009 to mid-2010 coincided with the observed fall in service performance.

11.14 We considered it likely that Openreach had not been resourced adequately to meet the particular challenges of adverse weather conditions such as those that occurred in 2012. While acknowledging that it would be inefficient for Openreach to resource to meet all circumstances, the evidence raised a question about whether Openreach had been resourced below reasonable contingency levels.

11.15 We considered that the incentives on Openreach to ensure that it delivers services at a constant level had been weak. We had previously relied on contractually agreed SLA/SLGs and regulatory obligations of transparency to ensure service quality but the evidence on service level decline suggested that these factors on their own had not been sufficient. Moreover, we considered that given the cost of maintaining service quality it was not apparent that SLG payments could be set at a level that would on their own maintain service standards.

11.16 Below we review stakeholders comments and set out our updated assessment covering:

- BT’s quality of service;
- BT’s incentives to provide an adequate quality of service; and
- the impact of poor quality of service on competition and consumers.

\textsuperscript{554} We summarised the consultation responses and discussed them in Section 9 and Annex 9 of Ofcom, \textit{Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - Consultation on the proposed markets, market power determinations and remedies}, 3 July 2013, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/summary/fixed-access-markets.pdf}. 244
Summary of consultation responses concerning BT’s performance and the reasons for poor performance

Responses to the July 2013 FAMR Consultation

11.17 BT Group, BT Retail, Openreach, EE, the FCS, KCOM, SCS Telecoms, Sky, TalkTalk, Verizon, Virgin, Vodafone and [xxx] commented on the level of service provided by BT in their responses to the Ofcom July 2013 FAMR Consultation. All apart from Openreach considered that service quality had been unacceptable at times.

11.18 BT Retail attributed Openreach’s problems to increased fault volumes driven by increasingly volatile weather patterns and demand placed on the network by the growth of broadband and video use.\textsuperscript{555}

11.19 Openreach described service as an equation that depended on six factors, namely:

- demand (for provision and repair services);
- demand variability (the fluctuations in demand at a local level);
- forecasting accuracy (the extent to which demand variations can be forecast);
- service standards (the standards to which provision and repair are delivered);
- economic resourcing (how resources are organised to meet demand); and
- the practical capability to deliver service on the day (the constraints that prevent all orders being completed successfully).\textsuperscript{556}

11.20 Openreach said that increased broadband use, changes in the market structure and growing extremes of climate had pushed the capabilities of the copper access network and its engineering resources. Over the period from April 2012 to September 2013:

- fault volumes had increased by 9%;
- the proportion of Care Level 2 faults (which have to be fixed by the end of the next working day) had increased from 28% to 35%;
- the number of extreme weather events grew in 2012/13;
- daily fault volumes had exhibited extreme levels of volatility; and
- repair service performance had also been volatile due to high fault volumes driven by extreme weather, averaging 69% but ranging from 86% to 49%.\textsuperscript{557}

\textsuperscript{555} Paragraph 114, \textit{BT response to the July 2013 FAMR Consultations}, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.

11.21 Openreach considered that the service delivered in 2011/12, 2012/13 and 2013/14 was reasonable given its input costs, the extreme weather, high demand variability and the physical and practical challenges of service delivery. Openreach considered that the combination of several factors beyond its control and hugely variable local repair demand that cannot be accurately forecast limit its ability to deliver repair performance beyond about 65% against the applicable repair SLAs. Service improvements would require additional funding.

11.22 Openreach said that it expected its access network and engineering resources to come under increasing pressure in future due to:

- increasing Early Life Failure (‘ELF’) faults in line with recent trends and possibly driven by increasing market churn (more provision orders);
- MPF growth as a proportion of the installed base, increasing the proportion of Care Level 2 faults that need to be repaired the next working day.
- broadband growth and increased broadband use resulting in increased fault rates; and
- climate change leading to higher rainfall, more variable weather and more frequent and more severe extreme weather events.

11.23 Openreach emphasised that even, though the weather in 2013/14 had been less extreme than in 2012/13, fault volumes had been 12% higher in 2013 than 2012.\(^{558}\)

11.24 EE\(^{559}\), Sky\(^{560}\), SCS Telecoms\(^{561}\), TalkTalk\(^{562}\), \(^\text{[\&]}^{563}\), Virgin and Vodafone\(^{564}\) made comments about the reasons for the fall in service quality:

- most respondents considered that the main reason was a lack of incentives for Openreach to maintain service quality under the current regulatory regime. A number of related points were made:
  - as an operator with Significant Market Power, BT is not subject to the usual commercial pressure to offer service that meets its customers’ needs so poor performance is to expected absent regulation;

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\(^{559}\) P.13, EE response to the July 2013 FAMR Consultation, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf).


\(^{563}\) \(^\text{[\&]}\)

EoI has clearly not provided BT with sufficient incentive to maintain service quality;

- the application of RPI-X price controls without service quality regulation had increased Openreach’s incentive to reduce service quality to increase profits; and

- BT had been adequately funded to provide good service but had reduced service quality to increase its profits;

- TalkTalk did not agree with Openreach’s claim that poor performance was a result of poor weather or higher broadband uptake. Drawing on a report by Frontier Economics submitted with its consultation response (commissioned jointly with Sky), TalkTalk said that these factors could account for no more than 10% of the substantial increase in fault levels\(^565\); and

- Virgin considered that service quality had suffered because Openreach lacked the ability to forecast and respond to changes in demand such as periods of adverse weather.\(^566\)

### Ofcom’s assessment of BT’s quality of service and BT’s incentives

11.25 We have set out our research and analysis concerning BT’s quality of service in Annexes 30 and 31. First, in Annex 30 we set out the statistical information we have obtained on Openreach’s performance over the last few years. In Annex 31, we consider the possible causes of reduced quality of service, the degree to which BT, and in particular Openreach, can manage these causes and likely future impacts on service delivery. We also consider the level of support that Openreach needs from CPs to maintain service quality – in particular the forecasting of demand.

11.26 We have set out our research and analysis on fault rate trends in Annex 20 and on the resource impacts of fault repair ‘care levels’ in Annex 19.

11.27 As we have identified in Annex 31, since the end of 2009, and in particular from the summer of 2010, Openreach’s service performance deteriorated significantly, particularly with respect to the provision of new copper lines and fault repair. While service levels have fluctuated over time, the evidence shows that service levels have been consistently lower since 2009 for both MPF and WLR. For example, in 2009 between 85% and 90% of all MPF faults were repaired within the SLA timescales, but subsequently performance has never exceeded 80% and has frequently been nearer 70%. Provisioning has also been inconsistently supported. It was in reaction to this decline that CPs began negotiations in 2010-11 for the new SLA/SLG on appointment availability for provisioning (the agreement of which required the involvement of the OTA2 and Ofcom – see Annex 30).

11.28 Also, in 2012 there was a major deterioration in quality of service, precipitated by adverse weather conditions:


• repair completion within SLA timescale fell from June reaching a low point in February 2013 of 51.2% for WLR Care Level 1 services and 40.3% for MPF Care Level 2 services; and
• provision lead times also extended from April/May reaching a high point in January 2013 of 25.4 days for WLR and 21.3 for MPF.

11.29 This led to industry pressure on Openreach to devote significantly more resources to improve performance.

11.30 As we summarise in Annex 31, the reasons for the decline in performance are mixed. The evidence we have gathered suggests that there was a period from 2009 to mid-2010 when Openreach steadily reduced services resources devoted to access products. This coincided with the drop in service performance observed. However, there were other factors at play, including weather conditions (particularly in 2012) and changes in the mix of services which also contributed to the service difficulties.

11.31 Whilst we would expect that extreme weather conditions would lead to an increase in fault reports and repair times, and have a possible knock-on impact on provisioning work, it is not clear whether the adverse weather conditions in 2012 would have had such an impact on QoS if Openreach had more resources available.

BT’s incentives

11.32 It is clear that at certain points when Openreach experienced service challenges, it reacted to increased resource demands but its response does not appear to have succeeded in ensuring that service levels returned to 2009 levels. In addition, it is likely that Openreach was not resourced adequately to meet the particular challenges of periods of adverse weather conditions. While it would be inefficient to resource to meet all circumstances, the evidence raises the question as to whether Openreach was resourced below reasonable contingency levels.

11.33 We have previously relied on contractually agreed SLA/SLGs, regulatory obligations of transparency and EOI to ensure service quality but the evidence on service level decline presented in Annex 30 suggests that these factors on their own have not been sufficient. For example, given the cost of maintaining service quality it is not apparent that SLG payment levels can be set at a level that would, on their own, maintain service standards.

11.34 Moreover, while periodic pressure on Openreach by Ofcom, the OTA2 and its customers (including BT’s own downstream businesses) to improve service has had an impact, it is difficult to maintain such pressure over extended periods. Also, by its nature such pressure tends to be reactive rather than proactive, which means that long term declines such as those we observe since 2009 are not addressed. As set out in Annex 31, there are a number of potential factors that might cause Openreach to fail to maintain its service levels.

11.35 For Openreach as a standalone entity to have an incentive to improve service quality, the net impact on profitability from doing so must be positive. Three factors contribute to this impact: the balance between the cost of raising quality and the compensation due for not doing so; the impact on demand of improving quality; and the precise profit-maximising incentives created by the charge control.

11.36 As noted above, the RPI-X charge control structure in particular has been raised by stakeholders in their submissions as a structural obstacle to an improved service
quality. Stakeholders maintain that absent incentives to maintain service standards, financial pressure for savings will lead to deterioration in standards.

**Summary of consultation responses concerning the impact of poor performance**

11.37 In their responses to the 2012 FAMR Call for Inputs, respondents said that they had suffered reputational and financial damage as a result of Openreach’s quality of service problems.

11.38 In their responses to the July 2013 FAMR Consultation, stakeholders supported our assessment of the impact of poor quality of service on competition and consumers.

11.39 Several stakeholders – BT Retail, Sky, TalkTalk and Vodafone – highlighted how problems with Openreach service quality had negative effects for customers and for a CP’s business reputation (with consequences for competition and switching).

11.40 In terms of impact on customers, BT Retail stated that, while the service provided by Openreach was generally of a high standard, there had been times when it had not been acceptable to (them or) their customers, evident in a rise in complaints and customer contacts about service delivery. Sky noted its own experience and stated that UK consumers were suffering substantial detriment (linked to loss of service, wasted time and frustration) from inadequate Openreach service provision, and to illustrate gave examples of service problems experienced by Sky customers (such as the number of delayed repairs and the number of missed engineer appointments exceeding the service target, per month).

11.41 In relation to the impact on operators, BT Retail stated there had been a negative effect on its business customer “advocacy scores” in periods when Openreach had experienced service problems. TalkTalk and Sky also noted that the slow provision of new lines discouraged customers from switching providers – Sky cited its analysis of the impact of Openreach lead times (for provisioning a service) which showed several negative consequences including customers deciding to cancel their switch.

11.42 Stakeholders noted that service problems could place operators on the Openreach network at a competitive disadvantage compared to:

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569 A BT measure of how likely customers would be to recommend BT to others.


- Virgin, which Sky noted “advertises the speed at which it can connect new customers”\(^{572}\); and

- BT Retail, given that disruption or delay in switching between operators could result in a “flight to brand”, which could benefit BT. For example, Vodafone stated that there was “a perception among a significant proportion of consumers (however inaccurate that perception may be) that the best way to avoid any protracted delays is to contract with BT’s own retail lines of business directly as they will somehow be able to secure a better level of service than any of BT’s competitors”.\(^{573}\) Furthermore, TalkTalk noted that slow provision of exchange space could protect BT Retail from LLU-based competition.\(^{574}\)

**Ofcom’s assessment of the impact of poor performance**

11.43 In Annex 30 we summarise the results of our market research on the consumer and SME impacts of poor services and their expectations of what constitutes a reasonable level of services, and consider what standard of service might be expected of the regulated products.\(^{575}\)

11.44 Stakeholders’ comments on the negative impact of recent service quality correspond to our assessment of the potential range of effects for CPs and end-users. In particular, we observe the potential for significant impact on competition both between CPs using Openreach services and others and also between BT and other CPs. More generally, the evidence indicates that low service quality has a direct impact on competition and that the lower the level of service quality, the greater the impact on competition.

11.45 We also consider that it is clear that there are weaknesses in the current regulatory structure with respect to incentives to maintain quality of service. The absence of a clear set of overall quality standards linked to regulated services, limitations in the effectiveness of SLG levels encouraging performance improvement, and a charge control structure which imposes financial targets which Openreach is encouraged to outperform all combine to undermine incentives to maintain quality of service levels. Accordingly, we consider that absent the new interventions we are now implementing, there is significant risk of further deterioration of service quality.

11.46 Given the evidence of the impact of poor service on competition and consumers and the relatively weak incentives on BT to maintain a consistent quality of service, we have gone on to consider whether it is appropriate to intervene to set a minimum standard for quality of service.

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\(^{572}\) EE made a similar point. It considered that volumes on the Openreach network were tied to service levels and suggested this could be seen from Openreach’s poor performance in the wet summer of 2012 and the “consequent impact” of increased Virgin uptake of Openreach customers during this period. See EE response to the July 2013 FAMR Consultation, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf).

\(^{573}\) P.6, Vodafone response to the July 2013 FAMR Consultation, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Vodafone.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Vodafone.pdf).


\(^{575}\) See paragraphs A30.55 to A30.105.
Our assessment of the case for minimum standards

11.47 In light of our analysis, in the July 2013 FAMR Consultation we proposed to introduce a condition imposing minimum standards for WLR and MPF services which would act as a service quality floor and would ensure that in future BT maintained its quality of service to a sufficiently high level to prevent material detriment to competition and consumers in fixed access markets.

11.48 We proposed that the existing SLAs should form that basis of the minimum standards and that minimum standards should apply to three measures for WLR, and MPF services:

- repair completion within SLA timescales;
- provision completion by Contracted Delivery Date (‘CDD’); and
- 12 day provision appointment availability (the proportion of appointed orders offered an appointment within 12 working days).

11.49 At that time we had not been able to obtain sufficiently robust estimates of the cost impact of minimum performance standards in order to present firm proposals regarding the level of the minimum standards. We therefore sought stakeholders views on our analysis and the proposed scope of the minimum standards and deferred consideration of the level of the minimum standard until the December 2013 LLU WLR Consultation when we were able to present more robust information on the cost impacts and also to propose levels for the minimum standards.

11.50 Below we consider stakeholders responses and set out our updated assessment concerning:

- the case for the imposition of minimum standards;
- the services which should be subject to minimum standards; and
- the basis for the minimum standards (i.e. the performance measures to be used for the minimum standards).

11.51 We then go on to consider some more detailed points about the design of the minimum standards in following section before considering the performance level at which the minimum standards should be set.

Summary of consultation responses

Responses to the July 2013 LLU WLR Consultation

11.52 In their responses to the Ofcom July 2013 FAMR Consultation BT Group, BT Retail, Openreach, EE, the FCS, KCOM, SCS Telecoms, Sky, 

TalkTalk, Verizon, Virgin, Vodafone and commented on our proposal to impose minimum standards. All apart from Openreach supported the introduction of minimum standards for WLR and MPF. Openreach considered that adequate incentives existed under the existing SLA/SLG regime. It did however welcome the opportunity for an industry debate about the trade-off between service performance and charges.

11.53 Most respondents considered that service quality had been unacceptable at times and that current regulatory arrangements had not provided Openreach with sufficient incentives to maintain service quality at an acceptable level. Consequently there was strong support for the proposals.

11.54 Some respondents disagreed with our proposal that the existing SLAs should form the basis for the minimum standards and there was also support for minimum standards in addition to those proposed.

**Ofcom’s assessment and decision regarding the case for minimum standards**

11.55 As noted above, in light of the evidence we have gathered and of our consideration of Openreach’s incentives, we consider that the range and degree of detrimental effects resulting from current levels of Openreach service quality are likely to continue unless further action is taken, such that they risk undermining the network access remedy.

11.56 We therefore consider that there is a need to introduce a condition imposing minimum performance standards for key services and to set them at a higher performance level than Openreach’s recent performance to ensure that the network access remedy is not undermined by, among others, the negative effects on consumers and operators and the switching experience resulting from service quality issues.

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588 We also discuss stakeholders comments on these topics made in response to the December 2013 LLU WLR Consultation later in this section.
11.57 This condition will sit alongside and be complementary to the other remedies that we are imposing in this review. While ultimately it might be hoped, and indeed expected, that service will be sustained well above this floor, the imposition of a minimum set of service standards should provide certainty for CPs and clarity around BT’s obligations, regardless of the pressure exerted by economic incentives.

11.58 In reaching our decision we have considered the extent to which analogous obligations are in force in other EU Member States under the CRF. As can be seen from the evidence set out at Annex 30, this approach is used by some other EU Member States. However, such an approach has not previously been adopted in the UK and we are therefore cautious about the standard we set and the range of services it applies to.

11.59 Indeed, while this is the first time we have mandated specific minimum standards for QoS in these markets, we note that in a number of other EU Member States there has been a greater level of regulatory intervention. Other EU Member States and EU accession states – including Italy, Portugal, Slovenia, Greece, Cyprus, Serbia, Austria and Poland – set the terms of both SLAs and SLGs in regulation. While we continue to consider that it remains preferable for Openreach and its customers to continue to negotiate such terms on a commercial basis, we also consider that the minimum standard allows CPs to enter negotiations over those terms with greater confidence that their businesses will receive at least an adequate service under any circumstances.

11.60 There are, of course, risks to imposing a minimum standard including:

- **inflexibility**: in the longer run, a minimum standard for a given product may result in that product being accorded a higher priority than is in the interests of either Openreach or CPs, at the expense of newer products for which a higher service quality could otherwise be provided;

- **‘floor’ becomes ‘standard’**: the intention of a minimum standard is to provide a backstop; it is not to define the appropriate service quality for Openreach to maintain, which will remain subject to agreement. The risk, as some consultation respondents noted, is that Openreach seeks to perform at the regulated minimum standard rather than seek continually to deliver improved performance in collaboration with its customers;

- **gaming**: Openreach structuring its operation in a manner that will ensure the targets are met but at the expense of other stages in the service or other services;

- **market distortion**: placing an obligation on BT to deliver a minimum standard regardless of extenuating factors may remove the incentive from CPs to work constructively with Openreach to deliver that standard, which may both be unfair to Openreach and tilt the balance in SLA/SLG negotiations too far in favour of CPs; and

- **unbudgeted costs**: maintaining a minimum standard may require an increase in resources which are not incorporated into the charge control, thereby penalising Openreach through regulation for meeting another regulatory obligation.

11.61 We believe that these risks can either be mitigated, by affording them appropriate consideration in the precise design of the remedy, or that they are anyway limited in nature:
• **inflexibility**: product life cycles are not so short that changes of this nature could not be foreseen. As the minimum standard became established, we could review its application to particular products as and when a need became clear and at the very least as part of the periodic review of the relevant markets;

• **‘floor’ becomes ‘standard’**: we consider that the nature of minimum standards with significant risk of penalties should they be breached should create the right incentive for BT to seek to outperform to avoid the risk of failure should unanticipated problems emerge;

• **gaming**: as we discuss in more detail in paragraphs 11.66 to 11.71 below, we address this risk partly though our choice of minimum standards and partly by the requirement to provide transparency about service quality through the provision of KPIs. If other quality of service problems occur with aspects of WLR and MPF not subject to minimum standards or with other services we could consider additional measures to address them;

• **market distortion**: we believe that there are strong commercial incentives on Openreach’s non-BT customers to work with BT to ensure that the minimum standards are met, given the consequences at the retail level arising out of poor quality of service; and

• **unbudgeted costs**: the triennial market review process, through the possibility of imposing a charge control to address any continuing SMP identified in these markets, should be capable of allowing Openreach sufficient headroom to maintain the minimum standard, the opportunity to earn a reasonable margin, and an ongoing level of efficiency gains where appropriate. Indeed, in considering our charge control proposals for this market, we are assessing the trade-offs between costs and service standards.

**The design and level of the minimum standard**

11.62 Having decided that it is necessary to impose a minimum standard on BT in respect of network access provision, we must decide what that minimum standard should comprise. Therefore, in this section we consider the detailed aspects of the design of the minimum standard, namely:

• the services which should be subject to minimum standards;

• the SLAs against which the minimum standards should be set;

• the time period over which compliance with the minimum standard will be measured;

• whether the minimum standard should be measured on a national or regional basis;

• stakeholders’ comments about the need for the minimum standards to be clearly defined and that they should incorporate a quality component to guard against the risk that the minimum standards might lead BT to focus on achievement of the minimum standards at the expense of service quality;

• the cost implications of the minimum standards and whether these costs should be recovered in the charge control; and
• the appropriate level of the minimum standards.

The services which should be subject to minimum standards

11.63 In the July 2013 FAMR Consultation we proposed that minimum standards should apply to the provision of new lines and fault repair of WLR and MPF services as these were the services about which there were particular concerns about quality of service and also because they are the highest volume services and therefore have the greatest impact on competition. We proposed that minimum standards should apply to the main provision and repair measures for these services, specifically:

• repair completion within SLA timescales;
• provision completion by CDD; and
• 12 day provision appointment availability (the proportion of appointed orders offered an appointment within 12 working days).

Summary of consultation responses

11.64 We received comments from BT Retail, EE, KCOM, Openreach, SCS, [38], Sky, TalkTalk, Virgin, and Verizon about the scope of the proposed minimum standards. As noted above, Openreach considered that adequate incentives exist under the existing SLA/SLG regime and that minimum standards are not necessary. Amongst the other respondents, there was support for minimum standards in addition to those proposed, in part because of concerns that Openreach would otherwise focus on achievement of the minimum standards at the expense of performance for other services. The main points were:

• BT Retail said there should eventually be minimum standards for all of Openreach’s services. However, it considered it would be premature to introduce minimum standards for GEA as the operational processes need more time to bed down590;
• SCS favoured minimum standards for all of Openreach’s services and also a backstop minimum standard requiring Openreach to deliver services in accordance with its SLAs. It also wanted minimum standards for Openreach’s ‘service desk’ support function as service quality was considered to be particularly problematic591;
• [38] favoured minimum standards for all of Openreach’s services and also a backstop minimum standard requiring Openreach to deliver services in accordance with its SLAs. It also wanted minimum standards for Openreach’s ‘service desk’ support function as service quality was considered to be particularly problematic592;

592 [38]
Sky said that minimum standards should also be applied to GEA and SMPF products and should also apply to non-appointed GEA provisions\(^{593}\),

EE said that minimum standards should apply to GEA services for consistency and to avoid the risk of unintended consequences\(^{594}\),

KCOM supported a wider range of minimum standards because it was concerned that Openreach would otherwise allow performance of other services to degrade\(^{595}\),

Virgin supported the proposals on the basis that Ofcom should be cautious when introducing new regulations\(^{596}\);

TalkTalk suggested a minimum standard for fault rates should be considered\(^{597}\), and

Vodafone\(^{598}\) and Virgin\(^{599}\) were concerned that the minimum standards might lead Openreach to divert resources away from wholesale leased lines services leading to a decline in service quality for wholesale leased lines services.

Three respondents expressed concerns about the scope of the existing SLAs and the proposed minimum standards for business customers:

- \([ precautions ]\) was concerned about the suitability of the existing SLAs for business users. In particular, given the critical nature of voice and data services to businesses, they required high levels of certainty that provision and repair work would be completed as agreed and clear and reliable communications when things go wrong\(^{600}\),

- \([ precautions ]\) was also concerned that the proposed minimum standards excluded the services used by business customers, namely ISDN and Care Level 3 and 4 WLR and LLU services. It was concerned this would lead to performance of these products being sacrificed\(^{601}\).

the FCS said that Openreach should be subject to standards that meet the needs of business customers. In particular, meeting appointments and getting jobs right

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\(^{593}\) Paragraph 3.38, Sky response to the July 2013 FAMR Consultation - quality of service, 

\(^{594}\) P.13, EE response to the July 2013 FAMR Consultation, 
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.

\(^{595}\) P.14, KCOM response to the July 2013 FAMR Consultation, 
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/KCOM.pdf.

\(^{596}\) P.15, EE Response to the July 2013 FAMR Consultation, 
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.

\(^{597}\) Paragraph 2.6, TalkTalk response to the July 2013 LLU WLR Consultation, 

\(^{598}\) Response to question 3.1, Vodafone response to the December 2013 LLU WLR Consultation, 

\(^{599}\) P.2, Virgin response to the December 2013 LLU WLR Consultation, 

\(^{600}\) \([ precautions ]\)

\(^{601}\) \([ precautions ]\)
first time were much more important to businesses than to residential customers; and

- Vodafone said that Ofcom should also take into account the difference between the needs of business and residential users. Businesses placed much more importance on the certainty of order fulfilment on the agreed date rather than speed of delivery.

Ofcom’s assessment and decision regarding the services which should be subject to minimum standards

11.66 We understand the desire of stakeholders to extend the range of services subject to minimum standards. We acknowledge there is a risk that BT might focus on the minimum standards at the expense of other services in the fixed access markets such as GEA, SMPF and ISDN. However, we need to balance this risk against the risks associated with the imposition of further minimum standards. As we have discussed above, there are a clear risks associated with minimum standards and all targets risk distorting behaviours. We are also mindful that this is the first time we have imposed minimum standards in the fixed access markets and we therefore consider a cautious approach is appropriate.

11.67 Also as the analysis in Annex 30 and 31 indicates, the areas of particular concern have been in the provisioning of new lines and fault repair of the copper access services, specifically for WLR and MPF. Moreover, it appears clear that the key concern, as demonstrated by the evidence set out in Annex 30, has been in the availability of provisioning appointments and the speed of fault repair for those services. These are key services and failure to deliver them to an acceptable standard creates the clear potential to undermine the regulatory requirement to provide network access.

11.68 We note in this regard that the current focus in provisioning is on the SLA for appointment availability (i.e. the earliest date available when an appointment booking is made). The current rate of completion once an appointment is confirmed is high (see Annex 30). Both of these steps are integral to the provision to an end-user of a particular service and we consider that both should be subject to a regulatory minimum standard. We also think that there is a risk that, if the proposed condition was focused solely on requiring a minimum level of service in respect of the provision of an appointment for an installation, Openreach could have the incentive to focus resources on this metric at the expense of others, such as the rate of completion on the day of the appointment. We wish to avoid such unintended consequences and, accordingly, we consider that it is appropriate for the proposed condition to include in the minimum standard both provisioning metrics. On balance we consider it is proportionate:

- to limit the minimum standards to the WLR and MPF services since they have been the focus of the quality of service concerns and because they are the

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highest volume services and therefore have the greatest impact on competition and consumers more generally; and

- not to introduce ‘precautionary’ minimum standards for other services to address the risk that quality of service for other services might suffer as a result of the imposition of minimum standards.

11.69 However, we will be monitoring BT’s performance through the increased range of KPIs that we have decided to impose. We also remain open to additional measures of ensuring performance should evidence emerge of other performance issues, including evidence that BT is diverting resources from other services as a consequence of our new standards.

11.70 We also acknowledge the concerns that the imposition of minimum standards in the fixed access markets might have an impact on the QoS BT provides in the delivery of wholesale leased lines services. In this respect we note that have recently started work on our Business Connectivity Market Review and plan to review BT’s quality of service in relation to the provision of wholesale Ethernet leased lines.\footnote{Ofcom, Business Connectivity Market Review: Timetable and initial call for inputs, 1 April 2014, http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity-market-review/summary/Business-Connectivity-Market-Review.pdf.} As part of this review, and also our regular interaction with Openreach, we are monitoring existing service levels in this market. If there was evidence of a material adverse impact of our current proposals on performance in the business connectivity market we would consider options for immediate intervention.

11.71 In relation to the concerns about the suitability of the SLAs and minimum standards for businesses, we have explained above why we consider it proportionate to introduce minimum standards only for the main WLR and MPF services. We consider that requirements for additional SLAs better suited to business CPs requirements are at this point in time best progressed by commercial negotiation and in this context we note the OTA2 facilitated programme considering Openreach’s service to business focused CPs. Finally, in relation to the level of the minimum standards, we set out our consideration of the appropriate level for the minimum standards later in this section. As we discuss there, we have set the minimum standards at a level that in our view strikes an appropriate balance between performance and the additional costs given the low willingness of users to pay extra for better performance. We acknowledge that business focused CPs may prefer higher minimum standards reflecting businesses more demanding requirements. In our view these requirements are best progressed by commercial negotiations about business specific SLAs.

The SLAs against which the minimum standards should be set

11.72 In the July 2013 FAMR Consultation we proposed that the existing SLAs should form the basis of the minimum standards (i.e. we would require BT to maintain a specified minimum level of performance in delivery of the existing SLAs) and that the minimum standards should apply to three measures for WLR, and MPF services:

- repair completion within SLA timescales;
- provision completion by CDD; and

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• 12 day provision appointment availability (the proportion of appointed orders offered an appointment within 12 working days).

Summary of consultation responses

Responses to the July 2013 FAMR Consultation

11.73 Sky\(^605\) and [\(\rightarrow\)]\(^606\) disagreed with our proposal that the minimum standards for WLR and MPF should reflect the current SLAs. Sky emphasised that the current SLAs are unacceptable to CPs but were the best that they had been able to negotiate with Openreach.\(^607\) The appointment lead time SLA was of particular concern for Sky and [\(\rightarrow\)]. Sky argued that Ofcom should consider imposing a five day appointment lead time, a target to which it worked for its own business and which it had sought unsuccessfully for some time to have Openreach offer.\(^608\) [\(\rightarrow\)] suggested that Ofcom should require Openreach to reduce the appointment lead time by 2 days each year.\(^609\) TalkTalk, however, cautioned that while shorter lead times would be better aligned with consumers' expectations, there was a risk this would generate additional costs that consumers would not be willing to pay.\(^610\)

11.74 Sky considered that Ofcom should adopt the conceptual approach applied to other aspects of regulation of BT's activities, and impose minimum service standards that were reflective of service levels in competitive markets. These would in turn be reflective of consumers' expectations. Sky considered that an approach comparable to a charge control would be appropriate, whereby Ofcom would determine a standard reflective of a competitive market and set a 'glide path' for BT to attain the standard over the period of the control.\(^611\)

Responses to the December 2013 LLU WLR Consultation

11.75 EE\(^612\), the FCS\(^613\), Openreach\(^614\), Prospect\(^615\), TalkTalk\(^616\), [\(\rightarrow\)]\(^617\), Vodafone\(^618\) and Verizon\(^619\) supported our proposal to use the existing SLAs as the service levels
around which to set minimum standards, albeit for different reasons and in some cases with reservations:

- Openreach said that it would be practical and proportionate to build in the SLAs that are well understood by CPs and Openreach. It also supported our proposal that amendments to the SLAs should be agreed by industry negotiation, following the proposed new arrangements;

- EE, the FCS, TalkTalk and Verizon supported the proposal because they were concerned that higher standards might increase costs. EE said that any change to the SLAs that would increase costs would need careful consideration. TalkTalk said that the minimum standards should not exceed the current SLAs as this could lead to increased prices, potentially to a level that consumers find difficult to afford; and

- [ ] supported the proposal in the interests of expediency, provided that the new SLA negotiation arrangements proposed by Ofcom were transparent and efficient, with a clear backstop provided by Ofcom.

11.76 While supporting the proposal, several of these respondents expressed reservations about the adequacy of the current SLAs:

- the FCS considered that there should be room for improvement in the SLAs in future;

- TalkTalk emphasised that current SLAs were not the outcome of a fair and balanced negotiation, rather they were effectively imposed by BT;

- [ ] emphasised that it considered that the existing SLAs were not suitable as the basis for the minimum standards and noted that in its response to the July 2013 LLU WLR Consultation it had made detailed representations as to why the existing SLAs were not suitable and had proposed alternatives;

- Vodafone said that further safeguards were required to ensure that particular customer segments or orders were not disadvantaged. In particular, Vodafone wanted an additional backstop safeguard to prevent orders that failed the main SLA targets being effectively abandoned; and

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Verizon said that it would prefer to see enhanced standards, however its prime concern was about performance measurement accuracy. In its view, Openreach’s KPIs did not accurately reflect its performance. It therefore considered that effective performance monitoring is required and that Ofcom should investigate the ‘deemed consent’ and Directors’ Service Office (DSO) processes.

11.77 Two respondents disagreed with using the existing SLAs as the basis for the minimum standards:

- Sky considered it inappropriate to base the minimum standards on the existing SLAs. Given BT’s SMP and CPs lack of countervailing buying power, Ofcom was wrong to say that the SLAs reflected industry agreement and to imply that the SLA targets were acceptable to CPs. Sky said that Ofcom’s own consumer survey provided evidence that consumers expected a higher standard of service than currently provided by Openreach; and

- KCOM understood Ofcom’s difficulty in pointing to clear evidence that more stringent SLA standards are required. However, it was concerned that using the existing SLAs as the basis for the minimum standards would simply set the standard at the level which industry had previously been forced to accept. KCOM emphasised that the SLAs were not the result of a normal commercial negotiation and consequently they were not as comprehensive as commercially negotiated arrangements and did not reflect the service standards that their business customers expect.

11.78 The appointment availability SLA was highlighted as a particular concern by Sky and Virgin. Sky considered that Ofcom was wrong to base the minimum standard on the current SLA with its 12 day lead time, given that many companies operating in competitive markets provided more timely service to their customers. Virgin understood that a substantial reduction in lead times would increase costs, however it noted that the evidence supplied in response to the July 2013 FAMR Consultation indicated that provision lead times were a genuine concern.

Ofcom’s analysis and decision on the benchmark by reference to which BT’s compliance with the minimum standard requirement should be assessed

11.79 The responses to the July 2013 FAMR Consultation and the December 2013 LLU WLR Consultation reflect the considerable divergence of views about our proposal to use the existing SLAs as the basis for the minimum standards.

11.80 We acknowledge that some CPs consider that more demanding SLAs are required to better align service levels with end-users’ expectations, particularly in relation to

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provisioning timescales. Also, some CPs would have preferred us to set new SLAs as part of this process and to use them as the basis of the minimum standards.

11.81 However, we do not consider that we are in a position, absent evidence, to conclude that more stringent SLA standards are required to set alternative standards. While we acknowledge CPs’ concerns about the SLA negotiations that produced the current SLAs, we remain of the view that there is no clear evidence that shorter timescales are required, particularly in light of any cost impacts that such a reduction in lead times would imply.

11.82 While some of the consumer evidence presented in the July 2013 FAMR Consultation did highlight consumer demand for shorter provisioning times, there was also clear evidence that there was a low willingness on the part of consumers to pay extra for such a change and a low priority was given to this requirement (this conclusion was supported by BT’s own research).624

11.83 In addition, it is clear that there is no single consensus view within industry as to what revised SLAs should be. While, for example, Sky and BT Retail have noted the advantages of reduced provisioning time, we note that this is not necessarily supported (if it comes with an additional cost) by other stakeholders.

11.84 We would note that our decision to set minimum standards by reference to the existing SLAs, does not preclude industry from agreeing changes to contractual SLAs in future. The aim of the minimum standards is to ensure that Openreach provides a level of service sufficient to allow CPs to provide competing services downstream (i.e. it contributes to the provision of effective network access). This does not preclude negotiated changes to SLAs within the forward look period of this market review. The revised SLA negotiation arrangements that we discuss in Section 10 are designed to address CPs’ concerns about the SLA negotiations with Openreach.

11.85 In addition, we consider that there are practical limitations to any approach seeking to adjust both SLAs and performance against SLAs at the same time. As we set out in Annex 17, the modelling of the resource/cost impact of changes to services delivery is already highly complex and open to alternative approaches, even where there is a body of data/evidence available as to how Openreach has been performing against existing SLAs. Introducing a change to the SLAs, particularly of the scale proposed by some stakeholders, would introduce greater uncertainty into the model to a point where confidence in its projections might be undermined.

11.86 Accordingly, we have decided to use the existing SLAs as the basis for the minimum standards. Minimum standards will apply to three measures for WLR, and MPF services:

- repair completion within SLA timescales;
- provision completion by CDD; and
- 12 day provision appointment availability (the proportion of appointed orders offered an appointment within 12 working days).

11.87 We have defined the minimum standards so as to reflect the relevant service performance measures associated with the SLAs. For the avoidance of doubt, while the minimum standards are based on the existing SLAs, they are not defined by reference to the BT SLAs. The applicable definitions are set out in the legal conditions in Annex 29. Thus any subsequent change to the BT SLAs would not alter the minimum standards.

11.88 In its response to the December 2013 LLU WLR Consultation, Openreach said that the minimum standard should incorporate all terms of existing SLAs. For example, the minimum standard should reflect the fact that some Scottish Islands are treated differently under the appointment availability SLA. It also argued that the minimum standard should reflect the terms of SLAs, so that Openreach is not more liable to breach the minimum standard where, for example, failures to meet the SLA are due to insufficiently accurate CP demand forecasts or where CPs request that Openreach delays work.\textsuperscript{625}

11.89 Having considered Openreach’s comments, we have decided not to reflect the contractual provisions of the SLAs highlighted by Openreach in the minimum standards. Taking each point in turn:

- **Scottish Islands**: Openreach’s contracts currently make only very limited exception for the Scottish Islands in relation to expedited repair, and in any case it seems very unlikely that volumes of appointments would be material in the context of the relevant regional target. We have therefore decided not to make provision for the Scottish Islands in the minimum standards;

- **CP requests for delay**: the minimum standard for provision completion will reflect the provision completion SLA in that it measures completion against the agreed completion date. Delays requested by CPs would be reflected in the agreed completion date and would not count as failures; and

- **forecasting exclusions**: we do not consider it would be appropriate to make allowance for CPs’ forecasting errors in the minimum standards. We do not have sufficient transparency or historical records to anticipate the impact of such an exemption. Further we consider that by excluding forecasting there is a further incentive on Openreach to manage its customers in this respect as part of their strategy to deliver to the standards. Clearly, it will always be open to Openreach to raise forecasting error as a mitigating factor in any compliance failure.

**The time period over which compliance with the minimum standard will be measured**

11.90 In the July 2013 FAMR Consultation we proposed that the compliance period for the minimum standards should be one year, i.e. the minimum standard should reflect Openreach’s average performance over a year (April to March).

Summary of consultation responses

11.91 KCOM and [9] commented on the compliance period for the minimum standards. KCOM considered that quarterly compliance periods would be more appropriate given the current service problems as it would enable Ofcom to take action more promptly if performance was below the minimum standards.626 [9] said that the annual compliance period was too long as it would allow seasonal variation.627

Ofcom's analysis and decision on the time period over which compliance with the minimum standard will be measured

11.92 We consider it is desirable for Openreach to achieve a consistent standard over time, however there are typically periods in each year when weather conditions are more challenging and consequently it will be more difficult to deliver to the minimum standard. In order to avoid the risk that Openreach will need to resource to an inefficiently high level we consider that the minimum standards should reflect Openreach’s average performance over a year (April to March). This will allow it to balance periods of high demand with periods of low demand and therefore to resource more efficiently. We acknowledge this may lead to some variation in performance across the year but consider this is acceptable as it will allow more efficient resourcing and ultimately lower costs.

11.93 For the first year, we will assess compliance over a shorter period from publication of this Statement in July 2014 to March 2015.

Whether the minimum standard should be measured on a national or regional basis

11.94 In the December 2013 LLU WLR Consultation we proposed to set minimum standards at a regional level and to apply the same target to each region. However, in view of Openreach’s concerns about the cost and complexity of complying with minimum standards in each of the 26 Openreach forecasting regions and Northern Ireland, we proposed that the minimum standards should instead apply to each of Openreach’s 9 GM regions and Northern Ireland rather than the 26 forecasting regions as originally proposed in the July 2013 FAMR Consultation.

Summary of consultation responses

11.95 Openreach welcomed our revised proposal. However it considered that a national target would be more appropriate for a major new piece of regulation, the impact of which was unclear. National minimum standards would allow Openreach to manage resources to meet the inevitable and highly localised peaks in demand more efficiently.628

11.96 Openreach argued that if Ofcom were to set regional minimum standards, it should take account of the additional cost and complexity associated with meeting regional

Rather than apply the same minimum standard to all regions, Ofcom should build flexibility into the targets to accommodate the unpredictable regional variations and the impact of MBORC events. Openreach argued that a flexible approach was required, particularly given the inclusion of MBORC affected jobs in the standards, in order to avoid the likelihood of it breaching the standards due to factors outside its control. Openreach also suggested how flexibility might be built into the MBORC allowance. We discuss whether the minimum standards should take account of MBORC events later in this section starting in paragraph 11.205.

Openreach also asked Ofcom to consider how the minimum standards would be measured if Openreach revised its GM regions.

EE, the FCS, TalkTalk and [X] supported our revised proposal to define regional minimum standards using Openreach’s 9 GM regions plus Northern Ireland. However Verizon and [X] said they preferred Ofcom’s original proposal to apply the minimum standards to Openreach’s forecasting areas.

Vodafone’s preference was to use the forecasting regions as originally proposed as it believed the additional granularity would drive service performance improvements in particular geographies. Vodafone noted that BT currently used 73 areas for MBORC declarations, and that some of the areas were repeatedly subject to MBORC declarations and would benefit most from targeted improvements in performance.

Prospect’s preference was national minimum standards. While accepting that Ofcom had moved significantly from its original proposals, it considered that the revised proposals were still far from workable. Having 10 regions would generate a significant amount of compliance activity and would risk tying Openreach up with compliance investigations as well as potential fines. It would also have a direct impact on the workforce. Prospect considered that the resources would be better spent on improving service quality.

EE, TalkTalk, [X], Verizon and Vodafone supported the application of a common target for the minimum standard in all regions, as did Prospect (not

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629 Paragraphs 83-84, Ibid.
630 Paragraphs 92-96, Ibid.
631 Paragraph 87, Ibid.
635 [X]

withstanding its objection to regional standards). Verizon and TalkTalk accepted that some small regional variation might be necessary. TalkTalk considered that it should be limited to no more than a +/- 2% variation between GM regions. EE did not consider that regional variation would be necessary given the move from forecasting areas to the larger GM regions.

11.102 Openreach did not agree that the same minimum standard should apply in each region. In its view, additional flexibility should be built into the targets to account for the inevitable and unpredictable variability in performance between regions. Openreach’s concerns were twofold. Firstly, severe weather events that led to MBORC declarations were unpredictable both in terms of timing and the regions affected. Secondly, the impact of severe weather events on performance was greater in rural areas than urban areas. Prospect also argued for a flexible application of weather allowances, as well as for flexibility in relation to the application of allowances for extreme weather to accommodate regional variation and tolerance in the standards for remote regions such as the Highlands and Islands of Scotland.

Ofcom’s assessment and decision on whether the minimum standard should be measured on a national or regional basis

11.103 We note there was strong support for regional targets amongst respondents to the July 2013 FAMR Consultation and as noted above amongst the smaller group that responded to the December 2013 LLU WLR Consultation.

11.104 We remain concerned that setting a national target could potentially result in Openreach delivering consistently worse outcomes for competition and consumers in certain regions, while still achieving any national target set. We therefore consider that it is appropriate to apply the minimum standards at a regional level.

11.105 Our definition of the regions reflects the current GM regions but is separately defined in the legal conditions in Annex 29. Thus any changes that Openreach might make to its GM regions would not affect the minimum standards during the period covered by this market review. If we were to impose minimum standards in the next market review we could consider whether it would be appropriate to adjust the regions to reflect any changes to Openreach’s GM regions.

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645 Paragraph 3.21-3.22, Ofcom, Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - consultation, 3 July 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/summary/fixed-access-markets.pdf.
11.106 With regard to Vodafone’s and [X] preference for the minimum standards to be applied to a larger number of smaller areas rather than the GM regions, we accept this could result in more consistent performance across the UK. We originally proposed such an approach in the July 2013 FAMR Consultation, where we proposed that the minimum standards should apply to Openreach’s 26 forecasting regions plus Northern Ireland. Having considered Openreach’s comments in response to the July 2013 FAMR Consultation we were concerned that this level of granularity would increase the cost and complexity of compliance, since Openreach would need to resource each region to respond to fluctuations in demand to a potentially substantially higher level than now.

11.107 We note that there was support for a common target for all regions amongst consultation respondents. From a policy perspective we consider it to be desirable to have the same target for each region to ensure a consistent minimum quality of service across the UK. We consider that Openreach’s concerns about the variable impact of MBORC events on regional performance can be more appropriately addressed by the way in which the MBORC allowance is structured in the minimum standards. It will also go some way to address Prospect’s concerns about the workability of regional minimum standards. We discuss this later in this section starting at paragraph 11.205.

11.108 In summary, we conclude that the minimum standards should apply to each of the 9 GM regions and Northern Ireland, and that the same target should apply to each region. We consider that this represents the appropriate balance between ensuring the consistency of standards across the UK and imposing a proportionate set of requirements on BT that does not unduly affect its ability to meet the minimum standards.

Detailed comments about the definition of the minimum standards

11.109 Several respondents also made comments about the detailed definition of the minimum standards.

Summary of consultation responses

11.110 Several respondents to the December 2013 LLU WLR Consultation made comments about the need for the minimum standards to be clearly defined and to incorporate a quality component to guard against the risk that minimum standards might lead to a reduction in quality. Several related points were made:

- TalkTalk said that in order to avoid disputes, Ofcom should clearly define relevant faults and what constitutes a fault repair for the purposes of the standards\(^{646}\),

- Vodafone said that the definitions should make clear that provision orders should only be counted as successful when the line is left in working order\(^{647}\).

\(^{646}\) Paragraph 10.21, *TalkTalk response to the December 2013 LLU WLR Consultation*,

\(^{647}\) P.4, *Vodafone response to the December 2013 LLU WLR Consultation*,
• Sky proposed that in view of the very high level of ELFs, the provision completion minimum standard should only count as successful orders that do not generate an ELF within 28 days;
• [sic] said that Ofcom’s definitions should define successful completion more explicitly and include a balancing quality component; and
• SCS supported the introduction of ‘Right First Time’ measures for provision and repair (i.e. measure that count as failures, provisions and fault repairs that lead to failures shortly after completion).

Ofcom’s analysis and conclusions

11.111 These points relate to concerns about the quality of Openreach’s work. In this regard, we acknowledge that there have been concerns particularly in relation to provision ELFs. There is a risk that imposing the minimum standards on provisioning has the potential to encourage lower quality provisioning (if, for example, this allowed the standard to be met for a lower level of resources). However, our assessment of ELFs (as set out in Annex 20) does not suggest that current ELF levels are driven specifically by the quality of installation but rather systems issues not directly related to field force activity. We also consider that there are already incentives on Openreach to reduce ELF incidences in the overall faults minimum standards.

11.112 We have not therefore included a quality component such as ELF or Right First Time in the minimum standards. However, we will be monitoring ELF rates in our newly imposed KPIs and if it appears that there are negative trends in these rates we will consider options for future intervention.

Cost implications of the minimum standards

11.113 Having decided it is necessary to impose minimum standards, it is also necessary to consider the cost implications and whether these costs should be recovered by BT through the charge controls we are imposing, as any additional costs will be a factor in our choice of the level of the minimum standards.

11.114 In the July 2013 FAMR Consultation we explained that higher standards might cause Openreach to incur additional costs and that we considered it appropriate to reflect those costs in the charge controls.

11.115 We proposed to investigate a Discrete Event Simulation Model commissioned by Openreach (‘the Resource Simulation Model’) to determine whether the resource estimates produced by the model would provide a sound basis for estimating the resource impacts of service quality improvements that could form an appropriate input to our regulatory cost models. To provide stakeholders with an early indication of the cost implications of minimum standards we provided initial cost estimates for

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various service standards based on initial outputs from the Resource Simulation Model.

11.116 In the December 2013 LLU WLR Consultation we set out our assessment of the Resource Simulation Model and the resource estimates produced by the model for various levels of minimum standards.

11.117 Below we consider respondents’ comments about the cost implications of the minimum standards. We discuss respondents comments about the resource estimates and the Resource Simulation Model later in this section and in Annex 17.

Summary of consultation responses

Responses to the July 2013 FAMR Consultation and the July 2013 LLU WLR Consultation

11.118 We reported that there were differing views amongst respondents to the July 2013 FAMR Consultation about the cost implications of minimum standards and whether they should be reflected in the charge controls.


11.120 Openreach said that a range of factors were putting its network and engineering resources under increasing pressure. Given these factors, it considered that the service delivered in 2011/12, 2012/13 and 2013/14 to date was reasonable given its input costs. In its view, the combination of several factors beyond its control, as well as significant variability in local repair demand that could not be accurately forecast, limited its ability to deliver repair performance beyond about 65% against the applicable repair SLAs. Openreach said that service improvements would require additional funding.651

11.121 Some respondents acknowledged that service quality improvements might increase Openreach’s costs. However, others disagreed or considered this would not necessarily be the case. A number of related points were made:

- BT said that Ofcom would need to provide Openreach with additional funding to invest in better service652;
- [X] argued that there was no trade-off between service quality and charges. Openreach is already funded to deliver services with the SLAs in mind. The charge controls should be priced for 100% delivery against the SLAs by default. As Openreach’s performance was currently below the SLA, BT must be making supra-normal profits, which should invite strong regulatory intervention. Also, current service quality failings were likely to be generating substantial costs, so service improvement may be self-funding653.

653 [X]
EE considered that there was not an inherent tension between RPI-X controls and service improvements. Businesses operating in competitive markets often faced pressure to reduce costs and improve service quality. It was also often the case that service quality improvements generated cost savings\(^{654}\); SCS considered that the misalignment between service levels and market requirements was likely to be generating significant costs for Openreach, so that service improvements may be self-funding\(^{655}\); Sky was concerned at Ofcom's apparent presumption that better service quality would necessarily result in higher charges. Sky considered there were likely to be substantial opportunities to improve service quality through organisational and process efficiencies and suggested that Ofcom should commission specialist research to understand the scope for such efficiencies\(^{656}\); Verizon considered that an increase in the costs allowed to Openreach would be unwarranted. Ofcom should focus on improving Openreach's reporting of service performance\(^{657}\); and Vodafone considered that Openreach was inefficient and made excessive returns. Ofcom should focus on Openreach's incentives and its inefficiency rather than on putting up charges to improve service quality.\(^{658}\)

11.122 Sky\(^{659}\), TalkTalk\(^{660}\) and Virgin\(^{661}\) said that Ofcom should closely scrutinise Openreach's claims for extra costs. All called for Ofcom to provide transparency about the Resource Simulation Model. Sky and Virgin called for Ofcom to subject the model to independent review and Sky said it should be made available to stakeholders for review.

\(^{654}\) P.12, EE response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf. 


Responses to the December 2013 LLU WLR Consultation

11.123 KCOM’s impression was that the proposed minimum standards were not challenging for Openreach and would be well within the range which it is able to achieve with current resources.\footnote{P.1, KCOM response to the December 2013 LLU WLR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-llu-wlr-charge-controls/responses/KCOM.pdf.}

11.124 \footnote{Paragraphs 2.1-2.44, Sky response to the December 2013 LLU WLR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-llu-wlr-charge-controls/responses/Sky_-_FAMR_Charge_Controls.pdf.} reiterated its objection in principle to additional funding for quality improvements. In its view this was tantamount to rewarding BT for past failures. It also noted that from its daily interactions with Openreach that there was a significant cost of failure which should be corrected before additional funding is considered.\footnote{\footnote{[\text{"\}}}\text{}}

11.125 Sky considered that Ofcom was wrong to accept Openreach’s argument that service quality improvements would raise its costs. In its view, this ignored a great deal of evidence about the ability of firms in Openreach’s position to achieve step changes in service quality without increasing resources or whilst reducing costs.

11.126 Sky noted that in the past ten years transformation programmes among firms undertaking operational tasks similar to Openreach had become relatively common. Sky had undertaken such a programme with highly positive results and other UK firms that had undertaken significant field force transformation programmes included EDF Energy, npower, Scottish Power, SSE, Thames Water, UK Power Networks and Virgin. The consistent experience of such programmes is that they were able to deliver significant gains in service delivery often at the same time as reducing costs.

11.127 Sky argued that Ofcom should assess whether Openreach was operating as efficiently and effectively as it should be across a range of operational and quality measures. The most obvious way would be via benchmarking against other operators. Sky acknowledged that there was insufficient time for Ofcom to undertake such an exercise as part of the current market review. It argued that Ofcom should undertake this work after the market review has been completed and be prepared to amend the current approach if necessary.\footnote{\text{[\text{"\}}}\text{}}

Ofcom’s assessment of the cost implications of minimum standards

11.128 We consider that we need to recognise as part of Openreach’s operational costs calculated in the charge control any additional costs that occur as a consequence of imposing minimum standards. To do this we have assessed what additional costs occur and adjusted the base year cost for the charge control (as described in Annex 13).

11.129 We accept there is potential scope for improvement in processes and practices, including investment in the network which might allow services to be delivered at a lower cost. We also accept the points raised by some stakeholders that improved service quality may lead to other cost savings. However, we consider such changes are best estimated through the efficiency rate applied in the cost model.

\footnote{[\text{"\}}]}
11.130 We have based our assessment on existing evidence of the relationship between cost and service outcomes in Openreach’s business, such that we can quantify the incremental cost of any service improvement. We did not to seek to identify and model operational process improvements because of the high risk of regulatory failure of us doing so in the absence of a very significant understanding of Openreach’s operations and working practices.

11.131 Further, as in previous charge controls, we have proposed to include efficiency assumptions which should act as an incentive on Openreach to achieve operational efficiencies. We consider that this approach, which is not linked to specific expectations of individual process improvements but rather to historical outcomes of cost reductions, provides the most appropriate route to incorporating cost savings in the charges. Lastly, by imposing a minimum quality standard, we are reducing the degree of freedom Openreach has to reduce costs (for example by reducing quality standards) which in turn means that Openreach will have to identify other ways of achieving efficiencies, including through changes to operational practices.

11.132 We understand Sky’s concerns about the efficiency of service delivery, but we do not consider that there is a clear benefit from a further separate benchmarking exercise. In the establishment of the minimum standards within a regulatory framework which includes an RPI-X structure of charge controls, we consider that there are already incentives for Openreach to seek greater efficiency in its service delivery. What is important, as we discuss above in considering the impact of minimum standards on business services, is that we ensure through careful monitoring of KPIs that Openreach does not seek to offset the greater resource requirements imposed through the minimum standards through poorer service elsewhere.

11.133 We would also encourage Openreach, Sky and other stakeholders to consider, when engaged in future SLA/SLG and other contract negotiations, whether the existing contract structure contains the right incentives for delivering services to the quality desired and in the most efficient manner.

11.134 Having decided to recognise any additional costs that occur as a consequence of imposing minimum standards, as part of our assessment of the appropriate level of the minimum standards below, we have considered the cost implications associated with various level of standard.

The appropriate level of the minimum standards

11.135 In order to determine the level of the minimum standards we adopted the following five step approach:

- we established a bounding range for possible minimum standards (including an assessment of the technical possibilities);
- we identified and assessed the factors that we considered relevant in determining the appropriate minimum standard to impose on BT from within that range, namely:
  - the impact of quality of service on competition; and

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665 See paragraph 11.71.
- the cost of a given level of service quality, given the impact of cost on competition;

- we selected the minimum standards from the bounding range in light of our assessment of the relevant factors;

- we considered whether the minimum standards should include Openreach’s force majeure declarations (MBORC) and if so what the appropriate allowance for MBORC should be; and

- as we were proposing minimum standards for the first time, we considered whether it would be appropriate to implement transitional measures in the form of a glide path for the first years of the market review period.

11.136 Table 11.1 below shows the bounding ranges, minimum standards and glide path that we proposed in the December 2013 LLU WLR Consultation (before the application of the MBORC allowances).

### Table 11.1: Bounding ranges and minimum standards proposed in the December 2013 LLU WLR Consultation (before to application of MBORC allowance and transitional targets)

<table>
<thead>
<tr>
<th></th>
<th>Lower bound</th>
<th>Upper bound</th>
<th>Minimum standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repair completion within SLA timescales (excluding MBORC)</td>
<td>77.7%</td>
<td>85%</td>
<td>80%</td>
</tr>
<tr>
<td>12 day provision appointment availability</td>
<td>65%</td>
<td>100%</td>
<td>80%</td>
</tr>
<tr>
<td>Provision completion by CDD</td>
<td>90%</td>
<td>93%</td>
<td>90%</td>
</tr>
</tbody>
</table>

Source: December 2013 LLU WLR Consultation

11.137 We considered that it would be appropriate to include MBORC affected faults and orders in the minimum standards and also to adopt somewhat lower targets for the first two years as a transitional measure. We proposed that the MBORC allowance should be based on MBORC figures recorded in 2012/13 so that the allowance reflected the challenging weather conditions of 2012/13.

11.138 Table 11.2 below shows our final proposals taking these adjustments into account.

### Table 11.2 Minimum standards proposed in the December 2013 LLU WLR Consultation showing transitional targets (including MBORC allowances)

<table>
<thead>
<tr>
<th>Minimum standard (Showing ranges for consultation and proposal in brackets)</th>
<th>MBORC allowance</th>
<th>First year</th>
<th>Second year</th>
<th>Final year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repair completion within SLA timescales</td>
<td>3%</td>
<td>60%-75% (67%)</td>
<td>68%-76% (72%)</td>
<td>77%</td>
</tr>
<tr>
<td>12 day provision appointment availability</td>
<td>1%</td>
<td>41%-64% (54%)</td>
<td>60%-71% (67%)</td>
<td>79%</td>
</tr>
<tr>
<td>Provision completion by CDD</td>
<td>1%</td>
<td>89%</td>
<td>89%</td>
<td>89%</td>
</tr>
</tbody>
</table>

Source: December 2013 LLU WLR Consultation
11.139 Below we review stakeholders’ comments concerning the level of the minimum standards before setting out our updated assessment and decision concerning the level of the minimum standards. We have set out our assessment for each of the 5 steps discussed above in turn.

Summary of consultation responses

11.140 Openreach said that it was not convinced of the need for minimum standards given the rigour of the existing SLA/SLG regime. If Ofcom were to introduce minimum standards, it must take adequate account of the additional costs and difficulties associated with regional standards. Openreach said that Ofcom would need to build flexibility into the standards to accommodate regional variation (as discussed in more detail above) and to provide additional funding.\(^{666}\)

11.141 In order to meet all of the regional targets, Openreach said that it would need to plan to exceed all of the targets in all regions by a margin sufficient to cope with an unforeseen event that could occur towards the end of a compliance year. Openreach said that it would therefore need to be funded within the charge controls to a level several percentage points above the minimum standard.\(^{667}\)

11.142 Regarding the targets, Openreach supported Ofcom’s proposal that the provision completion standard should be set at 90% in each year of the control period as it had track record of sustained high performance on a national basis and relatively consistent performance on a regional basis. Openreach considered that the repair completion and provision appointment availability standards for 2016/17 would not be consistently achievable across the regions given the proposed funding arrangements. In Openreach’s view, the proposed funding arrangements were consistent with a repair completion minimum standard of 75% for 2016/17.

11.143 Openreach also referred to its response to the July 2013 FAMR Consultation, noting that:

- it had identified a number of factors that imposed a practical limit on the level of performance that it could consistently deliver, including significant variability in local repair demand, local repair skill demand volatility and the “glass ceiling” factors that prevented jobs being completed; and
- it had concluded that given the current level of repair challenges, minimum standards should be set on a national basis with a target of 75% (excluding MBORC) at the end of the control period for both the provision appointment availability and repair completion measures.

11.144 Drawing on this earlier submission, Openreach noted that regional targets would be harder to achieve, and on this basis the proposed repair minimum standard of 77% (including MBORC) would be virtually impossible for Openreach to achieve.\(^{668}\)

11.145 EE supported the proposed minimum standards for repair completion and provision completion but considered the appointment availability standard to be set too low.\(^{669}\)

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\(^{667}\) Paragraph 86, Ibid.

\(^{668}\) Paragraph 42, Ibid.

\(^{669}\) Paragraph 86, Ibid.
11.146 The FCS supported the proposed minimum standards but was concerned that Openreach would treat them as a target. In its view, performance should be as close to 100% as possible.670

11.147 KCOM disagreed with the targets proposed by Ofcom for the minimum standards and also the ranges from which Ofcom had selected the targets. In its view, they are unacceptably low as they were not reflective of business customers’ requirements in relation to certainty of performance against the agreed targets, particularly for completion of repairs.671

11.148 Prospect disagreed with the proposed minimum standards because it considered that the proposed uplift to engineering resources was insufficient given the scale of the engineering challenge required to achieve the targets. Prospect said that, in the past, its members working for Openreach had been loaded with additional work when Openreach was required to work within impossible cost constraints and feared that the minimum standards would have the same result.672

11.149 [x] welcomed the proposed minimum standard, noting that it would be a substantial improvement on the current position. However, it said that further improvements were required as the level of the minimum standard was not satisfactory. It also considered that Ofcom had not considered the views of the business sector which had a greater emphasis on quality than price.673

11.150 Sky said that the most striking feature of the proposals was their “undemanding nature”, with the possible exception of the appointment availability target. Sky argued that for the repair completion and provision completion standards, Openreach would be required to achieve little or no improvement by 2016/17 compared with its performance in 2011/12. One reason for this in Sky’s view was that Ofcom had selected targets below the mid-point in the bounding range it had defined, despite saying that the point it selected should be towards the upper end of the range. On this basis, Sky proposed that the minimum standards should be of the order of 84% for repair completion standard and 93% for the appointment availability standard.674

11.151 TalkTalk stated that the minimum standard should not exceed the current SLA as it would increase prices, potentially to a level that consumers found difficult to afford.675
11.152 Vodafone believed the minimum standards were not as ambitious as they could be. While it accepted that it was a safeguard and performance was expected to be higher, Vodafone argued that there was a risk that it would not be higher and this was the only safeguard. Vodafone considered that the targets (for repair completion within the SLA and provision appointment availability) should be 90% rather than 80% and commented that even that would be unacceptable in other industry sectors.676

11.153 Verizon’s main concern was about the minimum standard for the appointment availability SLA which would leave scope for lead times to be extended when priority is given to faults. Verizon also considered the 77% target for repair completion (including MBORC) to be too low for business customers who demand significantly higher performance.677

11.154 Virgin noted that in its consideration of the minimum standards, Ofcom had taken account of comments made about the competitive balance between CPs using Openreach’s wholesale services and Virgin. Also, in relation to setting an upper bound for the minimum standards, Ofcom had said it was concerned that poor performance risked putting CPs using Openreach’s wholesale copper services at a permanent disadvantage to Virgin due to the poor reputation of copper services. In Virgin’s view it would be inappropriate to compare a minimum standard for Openreach’s wholesale copper services with Virgin’s retail services and a direct comparison would not be meaningful given the differences between the networks. Additionally, CPs could choose to differentiate their services in a number of ways. Virgin noted that while in its view it was entirely correct that Openreach should offer a level of service that did not undermine the effectiveness of the access conditions, it should not be required to base its performance on the level of services independently offered by Virgin Media. This could distort competition and pricing within the market.678

11.155 Sky679 and TalkTalk680 were critical of the glass ceiling cited by Openreach as a constraint on its performance. TalkTalk considered it “astonishing” that BT was claiming that it was now impossible to achieve a quality of service that it was able to meet on a consistent basis only a few years ago. Both considered that the factors cited by Openreach as constraints on its performance were not in fact fixed. Openreach could take steps to make improvements and, as Sky noted, programmes such as Openreach’s R15K programme proved that significant improvements could be made.

Step 1: establishing a bounding range for possible minimum standards (including an assessment of the technical possibilities)

11.156 It is clear from the analysis we presented in the July 2013 FAMR Consultation and the responses from stakeholders that the current level of service in fault repair and provisioning is insufficient and gives rise to competitive concerns both between cable-based and copper-based services and between CPs using copper-based services.

11.157 The problems with the current level of service appear to be both the absolute levels and the inconsistency of performance for extended periods (for example the extended period of very poor performance in 2012/13 where, as we noted in the July 2013 FAMR Consultation, at times only 55% of repairs were delivered to the SLA target).

11.158 Determining the appropriate level for minimum standards involves an exercise of judgement. While it is relatively easy to identify levels of performance which might be considered inadequate, it is more difficult to precisely define what minimum service level is ‘adequate’ to secure effective network access. We have therefore approached this exercise by first determining a range of minimum service standards for each of the measures set out above, which we set by reference to the upper and lower bounds of possible minimum standards. We have then considered what the appropriate minimum standards should be within this range by reference to factors including the impact of improving performance, BT’s ability to achieve the standards and also cost (given the impact of cost on competition and potentially the prices ultimately paid by consumers).

Lower bound

11.159 While it was clear from our analysis of Openreach’s performance (as presented in Annex 31) and its consultation responses that in 2012/13 Openreach delivered performance standards below that which was acceptable, service in 2011/12 was clearly less problematic. While service performance was still considered an issue – hence the initiation by stakeholders of negotiations for improved SLAs on provisioning during the most severe instances of poor performance – the marked increase in provisioning lead times seen in 2012/13 was absent.

11.160 Accordingly, our assessment is that, absent other clear benchmarks, performance in 2011/12 is an appropriate lower bound for the range of the minimum standards in respect of repair completion and provision appointment availability. We would expect any minimum standard to be no lower than Openreach’s performance over that period.

11.161 In relation to the provision completion measure, we have observed that performance has remained consistently high. Performance to the SLAs for both MPF and WLR has been consistently above 90%. Consequently, in setting a minimum standard for this service we would not want to bring about a deterioration of Openreach’s current delivery performance. We therefore consider that the lower bound for the minimum standard for this measure should be 90%, reflecting historical achievement.

Upper bound

11.162 With respect to the upper bound of the range, the evidence presented by stakeholders, particularly on the competitive position of copper-based CPs compared to Virgin, suggests that a far higher level of performance compared to 2011/12 is
required to ensure competitive neutrality as between copper and cable based services.

11.163 We disagree with Virgin’s views about the appropriateness and validity of comparing the quality of service it offers with that of Openreach. While we accept that CPs can choose to differentiate their services in different ways, we remain of the view that it is appropriate to take account of Virgin’s QoS in setting the upper range of performance that Openreach could achieve.

11.164 It is also clear from our analysis of consumer and SME expectations, presented in Annex 31, that end-users are sensitive to poor performance and that the threat of poor performance has the potential to have a significant impact on their decisions to take or change services. For example, as set out in Table A30.29 of Annex 30, consumers and SMEs identified repairs outside the period required under the SLA as unreasonable and the cause of considerable concern.

11.165 While these observations do not lead to a definitive standard, they do suggest that the upper bound of any range lies significantly higher than that achieved in 2011/12. They also suggest that consumer satisfaction will be maximised (and therefore the harm to competition minimised) when services are delivered according to the SLAs as often as reasonably possible. Accordingly, our assessment is that the upper bound of our range for the minimum standard should be set at the highest level of performance that Openreach can consistently achieve under its current operational processes. This is not to say that it may be appropriate to set the minimum standard at this point; rather, it serves to define the upper bound of the range for such a standard.

11.166 In relation to the repair performance measure (repairs completed within SLA timescales) and the provision completion measure (orders completed by CDD), Openreach considers there is an upper limit, or “glass ceiling”, to performance that can realistically be achieved. This is because on any given day Openreach will inevitably not complete a small proportion of jobs for various reasons that are largely outside its control. These include, for example, jobs that require specialist access equipment and cases where Openreach staff could not gain access to customer premises. Based on a large sample of jobs taken between September 2012 and August 2013, Openreach has submitted that the glass ceiling level is 79.5% for repair and 83.7% for provision.681

11.167 In this regard we note that Openreach’s glass ceiling analysis counts as a failure any job that is not completed successfully on the day. It therefore differs from the provision and repair KPIs that reflect the SLAs against which we are setting the minimum standards. Most of the apparent difference between the glass ceiling measure and historical performance that TalkTalk discussed in its consultation response relates to this difference between the measures.

11.168 The KPIs exclude failures caused by customers or other CPs. For repair, there are two failure categories of this type:

- CP issue found, which includes cases where there is no access to customer premises, accounting for 5.42% of failures; and
- CP fault found, i.e. the fault was in the CP's network/equipment, accounting for 0.77% of failures.

11.169 For provision, there is one failure category of this type – CP issue found, which includes cases where there is no access to customer premises, accounting for 10% of failures.

11.170 Taking these factors into account, in KPI terms, the glass ceilings are 85.69% for repair completion within the SLA timescales and 93.7% for provision completion by the appointment date.

11.171 It is worth noting that these figures are somewhat lower than the upper end of weekly performance observed in 2009/10, before service performance declined. At that time weekly provision performance of 94% to 96% and weekly repair performance of 88% to 91% was observed. This will in part reflect differences in the measures used, the challenges of the change in mix of services and other changes in conditions.

11.172 However, the glass ceiling figures are closely aligned with the annual performance figures for 2009/10, which was largely unaffected by the decline in service performance. We therefore consider that they give a reasonable indication of the upper end of performance that Openreach can achieve nationally over a full year with its current processes and procedures. On this basis we consider that performance in 2009/10 is indicative of the upper bound of the range for the minimum performance standards for:

- repair completion within SLA timescales; and
- provision completion by CDD (i.e. provision completion by appointment date).

11.173 We agree with Sky and TalkTalk that there is likely to be scope for Openreach to raise the glass ceiling to some extent by implementing process improvements to address the constraints on its performance. We will therefore need to revisit assumptions on peak performance (the glass ceiling) in any future analysis related to minimum standards in subsequent market reviews.

11.174 Provision appointment availability SLAs were not introduced until November 2012, so there is less historic data against which to gauge the upper level of performance that

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682 For example, an appointed provision job that failed because there was no access to the customer’s premises would be re-appointed and if completed successfully on the second attempt, would be counted as a success in the appointment completion KPI.

683 See Table 10.23, Ofcom, Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - Consultation on the proposed markets, market power determinations and remedies, 3 July 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/summary/fixed-access-markets.pdf.

684 We note there were small differences in 2009/10 performance for MPF and WLR. For simplicity we have chosen a single upper bound figure of 85%.

685 We note there were small differences in 2009/10 performance for MPF and WLR. For simplicity we have chosen a single upper bound figure of 93%.
can be consistently achieved. However, provision appointment availability is primarily a function of the level of resources made available for appointments and should not therefore have an upper limit or glass ceiling to performance. Accordingly it is less clear that there is a natural upper bound in this case. We consider that it is therefore appropriate to consider that the upper bound is 100% but, as with the other targets, the decision of the appropriate minimum standard is a question of judgement, dependent on the other consideration of impact on competition and on costs.

11.175 Thus our bounding ranges are as shown in Table 11.3 below.

**Table 11.3: Ranges for minimum standards**

<table>
<thead>
<tr>
<th></th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repair completion within SLA timescales (excluding MBORC)</td>
<td>77.7%</td>
<td>85%</td>
</tr>
<tr>
<td>Provision completion by CDD</td>
<td>90%</td>
<td>93%</td>
</tr>
<tr>
<td>12 day provision appointment availability</td>
<td>65%</td>
<td>100%</td>
</tr>
</tbody>
</table>

11.176 Having identified a bounding range of possible minimum standards, we have then exercised our judgement to identify a point within that range to form the level of the minimum standards. In exercising our judgement we have considered the following factors:

- the impact of quality of service on competition and consumers; and
- the cost of delivery and its subsequent impact on competition.

**Step 2: assessment of relevant factors in determining the appropriate minimum standard to impose on BT from within that range**

**The impact of low quality of service on competition and consumers**

11.177 We have set out our assessment of BT’s quality of service and our consideration of consultation responses in paragraphs 11.7 to 11.46 above and in more detail in Annex 30.

11.178 Stakeholders’ comments on the negative impact of recent service quality correspond to the potential range of effects for CPs and end-users which we set out in more detail in our assessment. In particular, we observe the potential for significant impact on competition both between CPs using Openreach services and others, and also between BT and other CPs.

11.179 Furthermore, the evidence of the importance of good service quality in access services suggests that any standard should be relatively high, given the strong negative effects of low levels of service quality on competition and consumers. On balance, therefore, our consideration of the impact of quality of service on competition and consumers leads us towards the upper end of our range subject to our consideration of the resource implications of the standards.
The resource implications of minimum standards

11.180 The cost of the service has a direct impact on competition and therefore must be a consideration in setting any standard.

11.181 We have investigated the Resource Simulation Model provided by BT to determine whether it could provide a sound basis for estimating the resource impacts of service quality improvements that could form an appropriate input to our regulatory cost models.

11.182 As we have explained in Annex 17, we commissioned an independent review of the Resource Simulation Model from consultants Analysys Mason, and set out initial views on the model and its outputs in the December 2013 LLU WLR Consultation.

11.183 We have updated our analysis in light of the responses to the December 2013 LLU WLR Consultation and also commissioned Analysys Mason to investigate a number of points raised by respondents.

11.184 We have set out our consideration of the Resource Simulation Model, the resource estimates produced by it, and the responses to the December 2013 LLU WLR Consultation concerning the Resource Simulation Model in Annex 17.

11.185 Our overall assessment is that the Resource Simulation Model is a reasonable vehicle for understanding variations in Openreach operations, though one with clear limitations. However, a model of this type is necessarily a highly simplified representation of Openreach’s operations and consequently there will be an irreducible level of uncertainty about the resource estimates even if the issues discussed in Annex 17 were addressed.

11.186 As we have discussed in more detail in Annex 17, we consider that the Resource Simulation Model cannot produce reliable results for 2012/13 due to the inability of the simulation approach to cope with the large fall in performance observed in 2012/13. Consequently it is not suitable for use as an input to our charge control models. We have concluded that the 2011/12 resource estimates provide us with a reasonable basis to assess the resource increments and, therefore, the price impacts associated with the imposition of minimum standards.

11.187 As we discuss in more detail in Annex 17, we have addressed the risk that using the 2011/12 model results may underestimate the resources required in more challenging years in two ways. Firstly, as we discuss later in this section, we have adopted an MBORC allowance based on the more challenging 2012/13 outcomes. Secondly, we have decided not to make an adjustment to address an upward bias in the resource estimates (stemming from the resource estimation approach and the method used to shape the gamma distribution) in lieu of an adjustment to account for the difference in resource levels between 2011/12 and 2012/13.\(^{686}\)

11.188 Table 11.4 below shows the impact on 2016/17 unit costs of selected options for minimum standards for a 12 day provision SLA. These figures have been calculated by using the relevant 2011/12 resource uplift figures from the Resource Simulation Model\(^{687}\) to uplift the 2012/13 baseline engineering service cost data, including pay

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\(^{686}\) See Annex 17, paragraphs A17.184-A17.185.

\(^{687}\) See Table A17.5, Annex 17.
and non pay items. Further detail on the modelling approach used is set out in paragraphs A13.56 to A13.57 in Annex 13.

11.189 We have explicitly modelled changes to QoS for appointment availability and for repairs. We have not modelled any change to provision completion as completion rates are already consistently at or near the technical maximum.

11.190 We modelled a range of options but for the sake of simplicity we have set out the resource and indicative cost impacts of three performance scenarios in Table 11.4 below. These are performance targets of 75%, 80%, and 85% applied to both the 12 day appointment availability SLA measure and also the repairs completion SLA measure. Here we show the indicative impact on costs. It should be noted that the precise impact will be influenced by factors such as the service mix and volumes.

Table 11.4: Indicative resource impact of options for minimum standards on 2016/17 unit costs (FAC)

<table>
<thead>
<tr>
<th>Impact on resources and unit costs (per line)</th>
<th>Minimum standard 12 day provision appointment availability SLA/repair completion within SLA timescales (excluding MBORC) – both at current provision completion levels</th>
<th>75% / 75%</th>
<th>80% / 80%</th>
<th>85% / 85%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource Uplift</td>
<td>2.2%</td>
<td>3.9%</td>
<td>8.1%</td>
<td></td>
</tr>
<tr>
<td>MPF Rental</td>
<td>£0.22</td>
<td>£0.39</td>
<td>£0.80</td>
<td></td>
</tr>
<tr>
<td>WLR Rental</td>
<td>£0.17</td>
<td>£0.29</td>
<td>£0.61</td>
<td></td>
</tr>
<tr>
<td>SMPF Rental</td>
<td>£0.03</td>
<td>£0.05</td>
<td>£0.10</td>
<td></td>
</tr>
<tr>
<td>WLR Connection</td>
<td>£0.19</td>
<td>£0.33</td>
<td>£0.69</td>
<td></td>
</tr>
<tr>
<td>MPF Connection</td>
<td>£0.25</td>
<td>£0.44</td>
<td>£0.92</td>
<td></td>
</tr>
<tr>
<td>SMPF Connection</td>
<td>£0.17</td>
<td>£0.30</td>
<td>£0.63</td>
<td></td>
</tr>
</tbody>
</table>

Source: Ofcom

Step 3: Selection of the minimum standard

Repair completion and provision appointment availability

11.191 As we noted above, we consider that the evidence of the impact of poor performance suggests there is a strong positive relationship between performance, consumer satisfaction, and competitive outcomes. The evidence from our research into consumer and SME preferences strongly indicates the impact of poor performance on end-user satisfaction. Furthermore there is evidence of a distortion in competition from poor performance between BT and other CPs, and the potential risk of copper-based CPs being at a permanent disadvantage to Virgin due to the reputation of copper services.
11.192 Accordingly, for the reasons set out above, we consider that an appropriate minimum standard should be towards the upper end of our range subject to our consideration of the cost implications.

11.193 Clearly, however, we need to recognise the constraints on QoS delivery and to ensure that any minimum standard is proportionate in addressing the harm identified. In establishing the boundaries of the minimum standard range, we identified the upper technical limits of Openreach performance under its current structure. However, we need to recognise that there is a significant risk, given the variability of operating conditions in different years, to require BT to always operate at such a level. We therefore consider that it would be appropriate for any minimum standard to be set below this technical limit.

11.194 Finally, there is the question of the cost of a given standard. First, we consider that the cost of services is a critical factor in competition and in our view it would not be appropriate to set a standard that demands resource levels such that they risk significantly increasing the cost associated with the provision of those services and undermining demand. Second, our research indicates that consumers have a low willingness to pay higher charges for better quality of service. In light of these two factors we consider that in exercising our judgment to choose the minimum standard we should place more weight on the cost than on the performance level and select minimum standards that have a small impact costs.

11.195 Having regard to these factors, our judgement is that a minimum standard of 80% for repair and 80% for provision appointment availability strikes an appropriate balance because it imposes a reasonably high level of performance against the SLAs as a minimum standard (thus meeting the requirement for effective network access), is below the maximum achievable levels and will have a relatively small impact on connection and rentals costs in absolute terms.

11.196 We acknowledge that some consultation respondents would prefer that we set a higher minimum standard. However, the evidence from our analysis suggests that a movement to higher levels such as those suggested by Sky would lead to substantially higher costs (as illustrated by the 85%/85% entry in Table 11.4) and, on the basis of evidence from Openreach, a substantially increased risk of Openreach not being able to comply with the minimum standard during the period of this charge control. We would also observe that for Openreach to deliver on the standards proposed, it will need to be seeking to operate at a far higher delivery standard for a large part of the year in order to ensure that periods of particular challenge to service delivery do not lead to its average performance falling beneath the standards.

11.197 In part, respondents’ preference for higher minimum standards reflects CPs’ requirements for service quality levels geared to the needs of business customers. As we discuss in more detail in paragraph 11.71, we consider that these requirements are best pursued by commercial negotiations for new SLAs.

11.198 We consider that the additional flexibility we have built into the MBORC allowance (as discussed in Step 4 below) should address Openreach’s concerns about its ability to meet the regional targets given the geographic variability of severe weather conditions.

688 We also note that the 90% target proposed by Vodafone is above the upper bound of our range for repair completion and is therefore currently not achievable.
11.199 We consider that this is a proportionate response to the evidence on QoS and the impact of service changes. The evidence from our market research does not support setting a standard which drives substantial increases in Openreach costs (and hence charges). Equally, we need to ensure that the standards are consistent with a reasonable expectation of Openreach’s capacity to delivery service. Further, to accommodate the setting of the standards at this level we will adjust our assumption as the relevant Openreach resource requirements for service delivery in the charge control model by 3.9% which will allow BT to recover the costs associated with these minimum standards through the charge controls, thus we consider that the impact on BT should be neutral.

11.200 Clearly, it is possible that in the future we may wish to revisit the standards proposed to consider whether changes in consumer demand, the environment, network or Openreach systems would justify a modification.

Provision completion

11.201 In relation to the provision completion measure (i.e. completion of provision to CDD), we propose that the minimum standard should be set at 90%.

11.202 Openreach has consistently performed at or above this level since 2009 and we are therefore confident that it is achievable, while also close to the technical limits on delivery performance. We are not confident that the top of the range is achievable in all conditions.

11.203 We do not consider that this standard should have any impact on costs, given that it is achievable at the current resource level.

11.204 We will now go on to consider how we should allow for force majeure in these standards.

Step 4: Inclusion of force majeure affected services in the minimum standards

11.205 In the July 2013 FAMR Consultation we considered whether faults and provisioning orders affected by Openreach’s force majeure declarations (referred to as MBORC in BT contracts) should be included or excluded from the minimum standards.689

11.206 We considered that including faults and orders affected by these declarations would have good incentive properties and would make compliance obligations more straightforward. We therefore proposed to include an allowance for force majeure (MBORC) affected faults and orders in the minimum standards. At that time we did not have sufficient information to put forward detailed proposals. We therefore obtained further information from BT about the number of MBORC affected faults and orders and put forward proposals about the level of the allowance in the December 2013 LLU WLR Consultation.

689 MBORC is a contractual provision contained in all Openreach contracts which releases Openreach from liability under the relevant product terms and conditions in circumstances where the following criteria apply to Openreach’s failure to perform the contract: a) the cause of the incident is beyond Openreach’s reasonable control; and b) the fix to remedy within contractual timescales is also beyond Openreach’s reasonable control. ‘Major Incidents’ (or ‘high level’ MBORCs) are incidents that affect over 2,000 lines. ‘Low level’ MBORCs are incidents affecting less than 2,000 lines.
Summary of responses to the July 2013 FAMR Consultation about inclusion of an allowance for MBORC

11.207 All non-BT stakeholders were concerned about the risk of MBORC being used to diminish the effectiveness of the minimum standards conditions. The large majority (Sky, KCOM, Virgin, EE and TalkTalk) were supportive of our proposed approach to incorporate existing MBORC rates into the standard to avoid BT being able to increase the number of declarations in order to reduce the effective control.

11.208 For example, KCOM stated:

“We agree that force majeure affected services should be incorporated in the standards. We believe that the extensive use of MBORC is reflective not only of specific weather conditions but also indicates longer term maintenance issues which, when combined with adverse weather, have the effect of compounding its impact. We would stress however that it is vitally important how Ofcom defines the allowance for force majeure”.

11.209 Some stakeholders, such as Verizon, were concerned that existing levels of MBORC declarations may already be inflated and that their inclusion could permanently reduce the effectiveness of the measure.

11.210 Many stakeholders considered that BT’s use of MBORC would benefit from greater scrutiny and review.

11.211 Openreach considered that MBORCs were by definition matters beyond its control so this should be approached with caution. It argued that if Ofcom was to include an allowance for MBORCs within the standard measure, there should be a mechanism for Openreach to review the actual levels and vary the allowance if necessary.

Summary of responses to the December 2013 LLU WLR Consultation concerning the proposed MBORC allowance

11.212 EE, the FCS, Sky, TalkTalk, Verizon and Virgin supported our proposal to include an allowance for MBORC in the minimum standards. However,
there were concerns about the integrity of Openreach’s MBORC statistics and our proposal to use them to set the MBORC allowances. The main points made were:

- TalkTalk believed that Openreach declared MBORC inappropriately as a way of reducing exposure to SLG payments. In its view, the more important issue was the overall target including MBORC and the cost of achieving it, rather than how the target was divided between the base target and the MBORC allowance;

- the FCS agreed that the MBORC allowance should be based on the impact of MBORC in recent years but cautioned that it was not possible to predict future weather events;

- Sky\textsuperscript{698} and [\textsuperscript{699}] were concerned about whether Openreach declared MBORC in appropriate circumstances and suggested that Ofcom should review the data before using it as the basis for the MBORC allowances; and

- Verizon said that it had little confidence in the accuracy of Openreach’s MBORC statistics. It therefore considered only a minimal MBORC allowance should be granted.

11.213 Prospect did not see any merit in setting an MBORC allowance in advance. Given the unpredictable nature of force majeure events and the likelihood that climate change was affecting weather patterns, historic incidence would not be a good guide to future patterns. Consequently, Prospect argued that the proposed allowances would not be sufficient for exceptional weather such as the recent winter storms. Prospect suggested that an industry panel, perhaps independently chaired, could review MBORC declarations and the impact on Openreach on a case-by-case basis.\textsuperscript{700}

11.214 Vodafone had reservations about Ofcom using Openreach MBORC data to set a force majeure allowance given the lack of transparency about the criteria for its use. It suspected that, given the strong commercial incentive, Openreach used MBORC too frequently. Vodafone wanted Ofcom to investigate the criteria used by Openreach to declare and to stand down MBORC.\textsuperscript{701}

11.215 EE, the FCS and Virgin supported the proposed MBORC allowances and Sky, TalkTalk and Verizon disagreed with them.

- Sky disagreed with our proposal to round the repair MBORC allowance from 2.5% to 3%, suggesting that this was not Ofcom’s practice in relation to setting


\textsuperscript{699} [\textsuperscript{369}]

\textsuperscript{700} Pp.11-12, Prospect response to the December 2013 LLU WLR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-llu-wlr-charge-controls/responses/Prospect.pdf.

targets in other regulated sectors such as post. It also disagreed with our proposal to set the MBORC allowance for provisioning at 1%, suggesting that, as MBORCs did not generally affect provisioning, there should not be an MBORC allowance or other allowances should be made for severe weather events;702.

- TalkTalk agreed that the minimum standards should reflect the impact of force majeure events (MBORC) but raised three concerns about Ofcom’s approach:

  - in its response to the December 2013 LLU WLR Consultation, TalkTalk suggested that Ofcom had incorrectly applied the MBORC to the performance target. Rather than simply deduct the MBORC allowance from the target, Ofcom should have multiplied it by the target giving an allowance of 2.4% for the 80% performance target rather than 3%703;

  - in a supplementary submission704, TalkTalk suggested that the Openreach KPIs already included the impact of MBORC and therefore Ofcom had double counted its impact. Ofcom should therefore adjust the KPI upwards to reflect the impact of MBORC; and

  - in its supplementary submission, TalkTalk also suggested that, in any event, Ofcom was wrong to base Openreach’s costs on the modelled level of performance and then to require it to deliver lower performance (i.e. after deduction of the MBORC allowance). The minimum standard should reflect the cost allowance otherwise Openreach would be able to earn excessive profits; and

- Verizon supported our proposal to base the MBORC allowances on 2012/13 data but disagreed with the 3% repair allowance. In particular it regarded our proposal to round up the MBORC allowance to 3% as unduly lenient given its concerns about Openreach’s statistics, and also because a significant proportion of MBORC affected faults were fixed within the SLA timescales. Verizon understood Ofcom’s desire to make some allowance for provision MBORC and reluctantly supported the proposed 1% provision allowance.705

11.216 Openreach was concerned about the application of pre-determined MBORC allowances given the unpredictable nature of force majeure events, particularly the geographic variation of severe weather events from year to year which led to significant regional variation of MBORC levels from the national average.706

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Openreach proposed alternative means of designing the minimum standards to accommodate this variability:

- that they should not have a pre-determined MBORC limit and should exclude all jobs for which MBORC prevented completion to the SLA;
- excluding from the compliance measures all figures, measured by region/month, where the percentage of jobs subject to MBORC where Openreach missed the SLA rises above a certain level. Openreach suggested that the data from those months where the level of MBORC-affected jobs where the SLA was missed is in excess of 10% of all jobs affected by MBORC;
- increasing our proposed MBORC allowances to the sum of anticipated MBORC volumes (i.e. the proposed MBORC allowances) and standard deviation in historic MBORC volumes, measured by region; and
- holding Openreach to be in breach only if it fails to meet the minimum standards across multiple regions: for example, if more than one region does not meet the MBORC allowances. 707

11.217 Openreach supported our proposal to base the MBORC allowance on 2012/13 MBORC levels rather than 2011/12. However, it emphasised the unpredictability of MBORC levels and said that 2012/13 should be treated as a baseline above which MBORCs could rise in future. 708

11.218 In relation to the proposed MBORC allowances, Openreach supported the proposed 1% allowance for provision but considered that the repair allowance should be revised to 5%-6% rather than 3% in light of new information it had supplied to Ofcom since the December 2013 LLU WLR Consultation. 709

Ofcom’s analysis and conclusions

11.219 We appreciate respondents’ concerns that past levels of MBORC declarations may have been inflated by tactical declarations. While we do not consider that there is evidence of deliberate inappropriate use of MBORC declarations by Openreach, it is clear that there is a relationship between Openreach resourcing decisions and the need for and duration of MBORC declarations. 710

11.220 We have decided to use the historical rates of MBORC declarations which were associated with a failure against an SLA as a guide for the MBORC allowance to be included within the level of the minimum standards.

11.221 We requested information on the criteria for and impact of MBORC declarations from BT using our statutory information gathering powers 711 and sought further

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708 Paragraph 163-166, Ibid.
709 Paragraphs 155, 168-171, Ibid.
710 We accept, as Sky has highlighted, that there appears to be a difference in treatment of force majeure between targets in the post sector and the service standards proposed for Openreach. We consider that the difference is less stark than might appear on the surface, as the post targets have been set based on historic expectations of performance and exclude the most challenging period (pre-Christmas) from the calculations.
711 Second QoS information request of 23 May 2013 to BT.
subsequent clarification.\textsuperscript{712} We set out our analysis of this information in Annex 10 of the July 2013 FAMR Consultation (reproduced as Annex 31 of this Statement).

**Impact of MBORC on repair performance**

11.222 As noted above, Openreach subsequently provided new information about the impact of MBORC declarations. We have considered this new evidence as to the quantum of MBORC related repair failures in 2012/13 and accept that the previous information it provided had not taken account of centrally managed MBORC records.\textsuperscript{713} This has meant that the percentage of repairs that have failed during a MBORC declaration is between 5-6\% rather than 2.5\%.

11.223 We consider it appropriate to use the 2012/13 rather than the 2011/12 MBORC estimates in determining the allowance we should make for MBORC when setting the minimum standards. As we have observed in our analysis of faults in Annex 31, 2012/13 included a more challenging period of poor weather than most recent years. Accordingly, it offers, in our view, a reasonable proxy for an upper estimate of the potential for MBORC to impact on service delivery (from the data provided to us by Openreach high level MBORC declarations in 11/12 were related to c0.9\% of fault repair failures against SLA compared to 4-5\% in 12/13). While, as we discussed in Annex 17, we consider that it would be inappropriate to use 2012/13 as a basis for service cost estimates given the resource estimates produced by the Resource Simulation Model are unreliable, we do consider that it is appropriate to use 2012/13 data to set the MBORC allowance; given the need to ensure that Openreach is able to comply with a regulatory obligation, we consider that is appropriate to incorporate an upper bound estimate into the MBORC allowance.

**Impact of MBORC on provision performance**

11.224 With respect to provisioning, the situation is more complicated. Until October 2013 (and the St Jude storm), Openreach had not previously declared MBORC with respect to provisioning tasks. One potential reason for this is that, until 2012/13, there was no SLA for provisioning appointments. This meant that Openreach could divert resource from provisioning to fault repair without having to make SLG payments. This situation may now have changed following the introduction of an SLA for provisioning appointment availability which applied from November 2012.

11.225 Despite the introduction of the provisioning appointment SLA, we note that Openreach still has some scope to recover from challenges in fulfilling repairs due to adverse external events (e.g. bad weather) as the provisioning appointment SLA is longer (12 working days) compared to repair SLAs (typically one or two working days, depending on whether the service is WLR or MPF). This, coupled with the generally more predictable nature of provisioning requirements, means that, in our view, it is generally less likely that provisioning is affected by the events that trigger an MBORC declaration. Openreach provided the following explanation as to the circumstances leading to the recent MBORC declaration for provisioning:

\footnote{BT presentation to the OTA2, 2 May 2013.}
\footnote{The previous MBORC records provided by Openreach had been derived from the records compiled by Openreach field force engineers so only registered MBORC where the engineer either declared it to be the case due to the circumstances of the services or had been aware of the existence of the MBORC. The records had excluded a substantial proportion of High Level MBORC declarations where the linking of the declaration to an individual fault or provisioning tasks is only undertaken centrally.}
“The principal impact of the storm was to drive a significant increase in fault levels within affected areas. When a spike in fault intake happens there are a number of measures that Openreach can take in order to increase the repair capacity to address the situation and bring the work stack back to either normal operating levels or at least to ‘pre-spike’ levels. In such circumstances, repair is prioritised over provision and Openreach tries to bring the repair work stack back to its ‘pre-spike’ level as quickly as possible. To do this, Openreach will consider a number of measures including:

- Maximising the engineering resource available in the field by cancelling team meetings or non-time critical training;
- Increasing overtime including imposing contractual overtime where appropriate;
- Moving people from other Senior Operational Manager (SOM) patches into the affected areas either on a daily basis (moving engineers from adjacent SOM patches) or on a longer term (2 to 3 weeks) loan basis from areas further away.

The impact of the St Jude storm was very severe, both in terms of the size of the spike in fault intake (for example, on Tuesday 29 October the fault intake across affected regions was between 53% and 74% higher than the previous week) and the number of SOM patches impacted (17). The fact that the affected SOM patches were adjacent also reduced our ability to move engineers between adjacent patches.

We took all the usual steps to maximise the capacity for bringing the fault rates down including cancelling training, imposing contractual overtime in some areas (e.g. Wessex) and moving engineering resources where possible. However, it was assessed (given the severity of the impact) that these measures alone would not generate sufficient resource to bring the work stack back to pre-storm levels within an acceptable period of time (2-3 weeks). We also took into consideration the risk of future events that could further exacerbate fault levels in the short term including (given the time of year) the chance of further incidences of extreme weather before Christmas, plus the impact on engineering resource over the Christmas period due to annual leave. It was in these circumstances that the decision to divert resource from appointed provision activity to repair work was taken with the consequential declaration of the FAD714 MBORC.

It’s important to note that MBORC in this case was applied specifically and solely to the FAD provision SLA and not generally to all types of provision activity, and also that the MBORC impact was set at a SOM level based on the local conditions in that SOM, and was not a blanket removal of all SLG payments in affected areas.

714 First Available Date
Specifically, MBORC was applied to the difference between the pre-storm appointment availability levels and the post-storm appointment availability levels on a SOM patch basis as this was considered to be best way to measure to measure the impact of the storm. For example, if the appointment availability levels achieved prior to the storm were at or better than the appointment availability SLA, no SLG payments would be made during the MBORC period if the lead times increased above SLA; however if the levels achieved prior to the storm were at say 16 days, SLG payments would apply up to 16 days during MBORC, but any additional SLG payment arising from a lead time above 16 days would not apply.

MBORC was lifted once the appointment availability levels returned to their pre-storm levels. This happened in as short a period as 10 days in some patches and as long as just over 3 weeks. On 19 November we communicated that the final FAD MBORC had been lifted with effect from 23:59 on 17 November.\(^{715}\)

11.226 Openreach also noted that, although provision MBORCs have been rare to date, it cannot rule out the possibility that MBORC will be applied to provision again in extreme weather events (e.g. like the October 2013 St Jude storm).

11.227 However, given the very specific circumstances that led to this declaration, we consider that such declarations would be significantly less common than those for repairs. In the absence of a historical record against which to determine an MBORC allowance for provision, we consider that a cautionary MBORC allowance of 1% would be appropriate in relation to the appointment availability and provisioning completion standards.

Concerns about the calculation of the MBORC allowance

11.228 We understand TalkTalk’s concerns about how the MBORC allowance has been applied but we consider this reflects a misunderstanding about the treatment of MBORC allowances within the Resource Simulation Model. The SLAs that Openreach currently reports (and which were used for the performance targets in the Resource Simulation Model) exclude MBORC faults (from both the numerator and denominator of the measure). However, the simulation includes all faults, including those affected by MBORC declarations. As we have previously explained, we consider that including MBORC affected faults and orders in the minimum standards has good incentive properties. The MBORC allowances that we apply to the minimum standards to bring this about simply adjust the performance targets to reflect the widened scope of the minimum standard. They do not alter the absolute level of performance that Openreach is assumed to achieve and do not result in a misalignment between required performance and costs as TalkTalk suggests.

11.229 The MBORC allowance relates to the MBORC affected jobs that fail the SLA, expressed as a percentage of the gross volume of jobs (i.e. both MBORC affected and jobs not affected by MBORC). It can therefore be deducted directly from the original SLA measure.

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\(^{715}\) Email from Openreach to Ofcom of 22 November 2013.
Accordingly, we remain of the view that it is necessary to discount the modelled performance of 80% for repair and provisioning appointments to take account of our expectation of the effect of MBORC. We note the views of Sky that MBORC has not been traditionally applied to provisioning. However, this is not evidence that adverse events do not impact on BT’s ability to meet the minimum standards. We consider that such events have and will continue to have an impact on provisioning appointments and that the absence of prior MBORC declarations by BT merely reflects the fact that there was not until recently an SLA for provisioning. It is clear that with the advent of new SLA/SLGs and standards with respect to these services, the previous flexibility that Openreach has taken advantage of to avoid making a declaration (i.e. pushing out the provisioning appointments substantially into the future) is no longer an option and therefore adverse events that would not previously had been subject to an MBORC declaration will be in the future.

Taking account of the variability of MBORC events

We have also considered Openreach’s evidence that High Level MBORC events tend to be unevenly distributed such that a small number of regions tend to be more severely affected than others. High Level MBORC declarations relate to major incidents or events affecting more than 2,000 lines or a wider geographic area, typically due to severe weather such as floods or storms, major fires or terrorist attacks.

We commissioned Cartesian to investigate the distribution and variability of High Level MBORC declarations and its impact on performance. Cartesian analysed data that we obtained from Openreach under our statutory information gathering powers. As set out in Figure 43 and 44 of the Cartesian Updated Fault Rates Report, reproduced below as Figures 11.1 and 11.2, it is clear that in a given year, High Level MBORC events have a greater impact on a small number of GM regions and that different regions were affected each year. As can be seen from Figure 45 and 46 of the Cartesian report again reproduced below (as Figures 11.3 and 11.4), Cartesian also found that if we exclude High Level MBORC affected faults in the two highest affected GM regions, the average MBORC affected fault repair range moves down from 5-6% to 3-4%.

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716 The data was provided by BT in their response dated 7 March 2014 to the Sixth QoS Information Request.
717 For example, in 2012, the difference between fault repair performance excluding all MBORCs and including all MBORCs is 6% (67% - 61%) whereas the difference between fault repair performance excluding all MBORCs and excluding the top 2 GM regions is 4% (67% - 63%). Similarly, for 2013 the figures are 5% (67% - 62%) and 3% (67% - 64%).
Figure: 11.1 MBORC distribution by GM Region 2012/13

<table>
<thead>
<tr>
<th>GM Area</th>
<th>Total Faults</th>
<th>Total Faults Exceeded SLA</th>
<th>High-Level MBORCs Exceeded SLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Anglia</td>
<td>394,913</td>
<td>142,087</td>
<td>5,969</td>
</tr>
<tr>
<td>London</td>
<td>346,189</td>
<td>116,879</td>
<td>1,921</td>
</tr>
<tr>
<td>North East</td>
<td>369,289</td>
<td>148,559</td>
<td>23,685</td>
</tr>
<tr>
<td>North Wales &amp; North Midlands</td>
<td>390,838</td>
<td>178,239</td>
<td>44,103</td>
</tr>
<tr>
<td>North West</td>
<td>334,289</td>
<td>112,730</td>
<td>5,810</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>70,045</td>
<td>39,344</td>
<td>-</td>
</tr>
<tr>
<td>Scotland</td>
<td>265,139</td>
<td>94,000</td>
<td>13,932</td>
</tr>
<tr>
<td>South East</td>
<td>433,630</td>
<td>150,038</td>
<td>13,067</td>
</tr>
<tr>
<td>South Wales &amp; South Midlands</td>
<td>383,832</td>
<td>151,800</td>
<td>19,166</td>
</tr>
<tr>
<td>Wessex</td>
<td>400,501</td>
<td>182,940</td>
<td>31,416</td>
</tr>
<tr>
<td><strong>All GM Areas</strong></td>
<td><strong>3,388,665</strong></td>
<td><strong>1,316,616</strong></td>
<td><strong>159,089</strong></td>
</tr>
</tbody>
</table>

For 2012/13, North Wales & North Midlands and Wessex had the highest volumes of High-Level MBORCs exceeding the SLA.

Source: Cartesian Updated Fault Rate Report (copy of Figure 43)

Figure: 11.2 MBORC distribution by GM Region 2013/14

<table>
<thead>
<tr>
<th>GM Area</th>
<th>Total Faults</th>
<th>Total Faults Exceeded SLA</th>
<th>High-Level MBORCs Exceeded SLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Anglia</td>
<td>318,494</td>
<td>112,432</td>
<td>12,448</td>
</tr>
<tr>
<td>London</td>
<td>287,950</td>
<td>106,525</td>
<td>-</td>
</tr>
<tr>
<td>North East</td>
<td>297,843</td>
<td>104,406</td>
<td>5,044</td>
</tr>
<tr>
<td>North Wales &amp; North Midlands</td>
<td>324,562</td>
<td>139,614</td>
<td>11,558</td>
</tr>
<tr>
<td>North West</td>
<td>277,579</td>
<td>97,426</td>
<td>3,174</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>54,452</td>
<td>31,210</td>
<td>-</td>
</tr>
<tr>
<td>Scotland</td>
<td>234,106</td>
<td>96,313</td>
<td>22,474</td>
</tr>
<tr>
<td>South East</td>
<td>344,751</td>
<td>125,574</td>
<td>35,227</td>
</tr>
<tr>
<td>South Wales &amp; South Midlands</td>
<td>313,643</td>
<td>105,626</td>
<td>6,955</td>
</tr>
<tr>
<td>Wessex</td>
<td>328,215</td>
<td>146,287</td>
<td>30,705</td>
</tr>
<tr>
<td><strong>All GM Areas</strong></td>
<td><strong>2,781,595</strong></td>
<td><strong>1,065,413</strong></td>
<td><strong>127,585</strong></td>
</tr>
</tbody>
</table>

In 2013/14, South East and Wessex had the highest volumes of High-Level MBORCs exceeding SLAs.

Source: Cartesian Updated Fault Rate Report (copy of Figure 44)
Figure 11.3 Within-SLA Completion Comparison with Exclusion Scenarios 12/13

![Figure 11.3](source.png)

Source: Cartesian Updated Fault Rate Report (copy of Figure 45).

11.233 We have therefore considered how to deal with the concentration and variability of extreme events and how that should be reflected in the SMP condition imposing minimum standards on BT.

11.234 We could continue with the existing proposed MBORC allowance structure, increasing the fault allowance from 3% to 5-6%. However, as Openreach has highlighted, this is likely to mean that Openreach will almost certainly find that it will not be able to comply with the regulation in all GM regions without a resource increase well above the allowance we are currently proposing. As Openreach notes:

“All the regions where targets would have been missed had high MBORC levels in the year and our data shows that extreme weather events in any one month can make achieving annual targets impossible. For example, in Wessex in January 2014, our performance against the MPF repair SLA fell to 38.85%, compared to 65.89% the previous month and bringing the annual average down to 57.16%; this would have led to us failing the SMP target had
Further, given Openreach’s current view (which we accept) that there is a glass ceiling in its performance of 90%, it could not sufficiently resource to meet this demand in each GM region.

We also considered other options for dealing with this issue. First, as suggested by Openreach we could exclude all MBORC from the minimum standards. We consider that this would not provide the appropriate incentives on BT to seek to minimise MBORC declarations both in terms of operational decision making in the event of incidents and of decisions on future investment in network resilience.

We also considered allowing BT to either fail the standard in up to two regions a year without penalty, or work to a lower standard in two regions a year (the regions to vary in response to the circumstances giving rise to MBORC declarations and to be defined at the end of the compliance year). While this would avoid the need for Openreach to inefficiently resource their service areas while still preserving incentives on performance, we are concerned about the incentive properties of such a structure, particularly if one region experiences extreme weather events at the start of the compliance period. If a region was badly affected by extreme events at the start of the year, BT could have less incentive to seek to maintain performance after that event if they considered that they were likely to declare this region as one of their exempted regions.

Accordingly, while we consider that it is necessary to reflect this concentration of extreme events within the standards structure, we also consider it is necessary to minimise the degree to which extreme events distort BT’s incentives to maintain performance levels on a regional basis. We are also keen to minimise any potential incentive BT might have to inflate the overall number of declared MBORCs. We have therefore concluded that it is appropriate to apply a fixed MBORC allowance in each GM region such that the minimum service targets are the same for each region, but that, at the same time, we will exclude from our assessment of BT’s compliance with the minimum standards in any two GM regions, all failures against SLA for faults reported and orders provisioned during a High Level MBORC in those regions (i.e. we will not count the fault or the failure in the compliance calculations see Table 11.5). This will have the effect of imposing a lower minimum standard in two GM regions unless there are no applicable MBORC declarations, in which case the minimum standard will be the same across all GM regions.

Table 11.5 below provides a simple illustration of how compliance would be measured in an exempted region versus a non-exempted region.

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719 For the avoidance of doubt, the exemption will not apply to Low Level MBORC declarations.
Table 11.5: Example of how compliance would be measured in an exempted region relative to a non-exempted region

<table>
<thead>
<tr>
<th></th>
<th>Total faults in period</th>
<th>Faults cleared within SLA</th>
<th>Faults not cleared within SLA outside a high level MBORC</th>
<th>Faults not cleared within SLA timescales that are also affected by a high level MBORC</th>
<th>Performance achieved (for compliance purposes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region A (non-exempted)</td>
<td>1000</td>
<td>800</td>
<td>50</td>
<td>150</td>
<td>80%</td>
</tr>
<tr>
<td>Region B (exempted)</td>
<td>1000</td>
<td>500</td>
<td>125</td>
<td>375</td>
<td>80%</td>
</tr>
</tbody>
</table>

11.240 Table 11.5 illustrates that in the case of Region B (which, assuming for simplicity, is the region in which the High level MBORC exemption applies), we would exclude from the compliance calculation all the faults completed outside their SLA in the areas affected by the high level MBORC declaration, i.e.:

- the denominator is $1000 - 375 = 625$
- the numerator is 500
- Compliance is $500/625 = 80\%$

11.241 In the case of Region A (the non-exempted region) no additional allowance would be made for the faults that missed their target due to the existence of High Level MBORC, so in this case the denominator is 1000 and the numerator is 800.

11.242 We have also decided to adjust the repair MBORC allowance we will allow within each region to reflect the fact that we will exempt High Level MBORC affected repairs in two regions. Rather than setting the fault allowance at between 5%-6% to reflect the overall average incidence of repair MBORC, we have set it to 3% given that, historically, 2% of MBORC linked fault failure has tended to be concentrated in the two GM regions worst affected by MBORC (as illustrated by Figure 11.5 above). Given the greater flexibility for Openreach to manage its compliance that this new structure offers, we consider the lower boundary of the range is more appropriate. Given the uncertainty with respect to the provisioning allowance, we have decided to leave this at 1%.

Additional safeguards concerning High Level MBORC Declarations

11.243 We are conscious of the potential for this exemption (in the exempted regions) to encourage gaming of the MBORC declarations given that it has the effect of reducing the minimum standard that BT will be required to meet. We take some comfort from BT’s process for making High Level MBORC declarations in that they must meet defined criteria, the assessment of which is subject to a degree of oversight and scrutiny. However, we consider that there is a risk that the structure we are imposing could still allow BT to lengthen the duration of MBORC declarations such that the target it is required to achieve in two regions is materially lower than the target it is
required to achieve elsewhere. Accordingly, we consider that it is appropriate to remove this incentive by imposing a time limit on the duration of any exemption.

11.244 Typically, High Level MBORC events do not impact a whole GM region but are most likely to be localised. Openreach will declare a given part of a GM region to be subject to MBORC. During a given High Level MBORC event, not all areas ultimately affected by that MBORC are declared at the same time or removed from the declaration at the same time. Thus the total duration of a given MBORC event is likely to be longer than the impact of that declaration on a particular area.

11.245 We have concluded that, in order to minimise the risk of BT declaring unduly long MBORCs for the purposes of any potential compliance exemption, it is appropriate to limit the number of weeks that the exemption can be applied to failures in faults and provisioning targets for a given MBORC declaration. We have set this limit to eight weeks.

11.246 We have concluded that an eight week cut-off for any single high level MBORC event is appropriate based on analysis provided by Cartesian that shows the average impact of a given MBORC event in the previous two years has not materially exceeded 8 weeks. As can be seen from Cartesian report Figure 47 reproduced below, the highest average period for a SOM area to be impacted by an individual MBORC event is 58 days.

Table 11.6 Average duration of individual MBORC events

<table>
<thead>
<tr>
<th>GM Area</th>
<th>MBORC</th>
<th>Avg. Duration</th>
<th>All GMs MBORC Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2012</td>
<td>2013</td>
</tr>
<tr>
<td>North Wales &amp; North Midlands</td>
<td>MBORC #4</td>
<td>31.8</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>MBORC #5</td>
<td>28.2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>MBORC #6</td>
<td>23.7</td>
<td>-</td>
</tr>
<tr>
<td>South East</td>
<td>MBORC #9</td>
<td>-</td>
<td>12.0</td>
</tr>
<tr>
<td></td>
<td>MBORC #11</td>
<td>-</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>MBORC #14</td>
<td>-</td>
<td>28.7</td>
</tr>
<tr>
<td>Wessex</td>
<td>MBORC #4</td>
<td>15.3</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>MBORC #5</td>
<td>47.0</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>MBORC #6</td>
<td>36.6</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>MBORC #8</td>
<td>-</td>
<td>22.0</td>
</tr>
<tr>
<td></td>
<td>MBORC #9</td>
<td>-</td>
<td>26.0</td>
</tr>
<tr>
<td></td>
<td>MBORC #10</td>
<td>-</td>
<td>12.0</td>
</tr>
<tr>
<td></td>
<td>MBORC #11</td>
<td>-</td>
<td>16.0</td>
</tr>
<tr>
<td></td>
<td>MBORC #13</td>
<td>-</td>
<td>44.4</td>
</tr>
<tr>
<td></td>
<td>MBORC #14</td>
<td>-</td>
<td>58.0</td>
</tr>
</tbody>
</table>

Source: Cartesian Updated Fault Rate Report (copy of Figure 47)

11.247 In the table below we provide a simple illustration of how we would calculate the number of allowable MBORC faults in a region that has been deemed to be exempted and where multiple MBORC events have occurred in the compliance period.
Table 11.7 Impact of duration of MBORC events in a region deemed to be exempt for the purposes of High Level MBORC

<table>
<thead>
<tr>
<th>Duration (weeks)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Total permissible fault events for exemption purposes</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Level MBORC event 1</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>160</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Level MBORC event 2</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total MBORC exempted faults</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>420</td>
<td></td>
</tr>
</tbody>
</table>

Denotes permissible exemption
Denotes non-permissible exemption given MBORC event duration of more than 8 weeks

Source: Ofcom

11.248 Table 11.7 illustrates that for each MBORC event, only faults that occurred in the first 8 weeks of each MBORC event would be allowable for the exemption calculation. So in the case of MBORC Event 3 which is 10 weeks, only the first 8 weeks would be deemed as exempt. So whilst 250 fault events were affected by MBORC, only 200 would be deemed as exempt. Again using the example above and assuming that: (i) there were 1,000 fault events in the compliance period and (ii) that BT successfully cleared 400 of these, BT’s actual performance would be deemed to have been 69% (i.e. 400/(1000-420)).

11.249 We will also, as part of our annual compliance review, seek under statutory powers more detailed information on the circumstances of the high level MBORC declarations in the two GM regions in which High Level MBORC declarations are exempted as well as general information on high level MBORC declarations in all regions – this information is expected to include data on the number and length of high level MBORC declarations and the reasons for applying MBORC. In addition, we are now seeking KPIs data on MBORC use and we will consider in the next review of these standards whether there is any evidence of misuse of MBORC.

Summary

11.250 So in summary:

- all GM regions and Northern Ireland will be subject to the same minimum standards i.e.:
  - 77% of all repairs to be completed within existing SLA targets for WLR service level 1 and MPF service level 2;
  - 79% of all first provisioning appointments to be offered within 12 days; and
o 89% of provisions to be completed by the CDD; and

- in assessing BT's compliance, for two GM regions in any given year failures against the applicable minimum standards for provisioning and fault repairs that occurred during High Level MBORC declarations are discounted:
  o however, the exemption is limited in respect of any given MBORC declaration to eight weeks; and
  o we will request from BT details of the High Level MBORCs declared and the justification for the length of the declaration.

11.251 We consider that despite the need to modify the structure of the condition, it still retains the incentive properties we sought. BT still has the incentive to reduce the impact of MBORC overall, as in any given year it will be held accountable for all failures in 8 out of 10 regions. BT will need to ensure that it is targeting performance well in excess of the minimum standards to ensure that its yearly average performance at least meets the standards. Also, given the uncertainty, at least in the early part of the year, over which two regions are likely to be subject to a lower minimum standard, Openreach will still have an incentive to seek to redress average poor performance in all regions after a high level MBORC event.

Step 5: Minimum standards conclusion and glide path

11.252 Finally we consider when the minimum standards should come into force and whether there should be any transitional arrangements in the form of the glide path up to the full minimum standard.

11.253 In the December 2013 LLU WLR Consultation we proposed to set somewhat lower targets for the first two years of the control as a transitional measure in order to give BT the opportunity to restructure and resource so that it could guarantee compliance with the minimum standards.

Summary of consultation responses concerning the glide path

11.254 As noted in paragraph 11.142, Openreach supported Ofcom’s proposal that the provision completion standard should be set at 90% in each year of the control.

11.255 Openreach proposed that the first year targets for the provision appointment availability and repair completion minimum standards should be set at the bottom of Ofcom’s range, and/or Ofcom’s proposed targets should be combined with other changes to the measures in order to provide more flexibility to accommodate regional variations in performance. This was because, despite the mitigating actions Openreach had taken, 2013/14 performance to date demonstrated that it was still having difficulty in hitting regional targets consistently. Also, Openreach would need time to make the necessary changes to ensure compliance with the 60 new standards and therefore transitional arrangements were appropriate.\(^{720}\)

11.256 Openreach considered the straight line glide path approach to be sensible, however, given the uncertainty about the operation of the minimum standards, it proposed that

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Ofcom should retain some flexibility to make adjustments. It proposed that Ofcom review the second year minimum standards towards the end of the first year.\textsuperscript{721}

11.257 EE considered that the transitional targets would harm consumers and competition, and would reward BT for past inefficiencies. The minimum standards should therefore apply in full in the first year.\textsuperscript{722}

11.258 The FCS considered that the 55% first year target proposed for provision appointment availability was unacceptably low and would not meet the needs of CPs serving business customers. The FCS was also critical of the proposed glide path which it considered overly long to reach a low minimum standard.\textsuperscript{723}

11.259 KCOM did not accept that there was a need to impose lower minimum standards in the first two years of the control period because of a perceived significant risk of failure. It regarded the first year target of 67% for repair completion within SLA targets as unacceptably low and believed that glide path targets would not provide Openreach with adequate incentives to offer a reasonable level of service.\textsuperscript{724}

11.260 Prospect agreed in principle with the glide path up to the full minimum standard but considered this a secondary consideration given its concerns about the adequacy of the proposed funding to meet the minimum standards.\textsuperscript{725}

11.261 Sky considered that the targets for the first year of the glide path should be revised to reflect 2011/12 performance. While Openreach would have to undertake some recovery activity during 2014/15, this should be readily achievable given that performance had declined since 2011/12.\textsuperscript{726}

11.262 \textsuperscript{[X]} said that the glide path should be more aggressive and should require the full minimum standards to be achieved in the second year of the control period.\textsuperscript{727}

11.263 TalkTalk wanted the minimum standards to come into force as soon as possible. If Ofcom’s statement was delayed, the first year minimum standards should apply for the remaining part of the financial year to March 2015.\textsuperscript{728}

\textsuperscript{727} [X].
11.264 Virgin observed that the glide path would effectively permit Openreach to glide up to the minimum standards from the unacceptable level of performance in 2012/13. Given this, there was a risk that performance in the first two years of the control period would undermine the effectiveness of the access conditions. Given that Openreach had already had time to take mitigating action, Ofcom should consider whether it would be reasonable to impose the full minimum standards in the first year.729

11.265 Verizon considered that Openreach would need time to develop processes for measuring and reporting against the minimum standards, and supported the first year target for repair completion. However, it considered that Openreach should be required to meet the minimum standard in full in the second year.730

11.266 Vodafone accepted the need for a glide path, but considered that the first year targets should be higher given the urgent need for better QoS. Similarly, it considered that the glide path lacked ambition and should be reset with a more challenging gradient.731

Ofcom’s analysis and conclusions

11.267 Our view is that BT should be required to meet the standards in full as soon as reasonably possible. However, in setting mandatory minimum standards for the first time, we need to recognise the need for BT to restructure and resource in a manner that will allow it to guarantee delivery. It follows that it would be inappropriate to set standards within the identified acceptable range if we consider that there is a significant risk of failure. Equally, however, we would not wish to allow service levels to deteriorate. Accordingly, as a transitional measure we consider it appropriate to impose somewhat lower minimum standards for the first two years.

11.268 In the December 2013 LLU WLR Consultation we noted that, since the service quality problems in 2012/13, BT has had time to take mitigating action (such as recruiting additional staff) and we would therefore expect that BT could achieve better performance if similarly challenging conditions were to occur in the first year of the charge control. On this basis, we proposed to set the minimum standards for repair and provision appointment availability within a range bounded by performance in 2012/13 at the lower end and performance in 2011/12 at the upper end, 2011/12 being the lower end of our bounding range discussed earlier in this sub-section. The ranges were therefore:

- repair 63%-77.7%; and
- 12 day provision appointment availability 42%-65%.

11.269 Our initial view was that targets roughly in the middle of this range would be appropriate and we therefore proposed to set the minimum standard at 70% for

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repair and 55% for provision appointment availability in the first year. We proposed that the minimum standards for the second year should be set at the midpoint between the first and third year standards.

11.270 We did not consider that a transitional target was necessary for the provision completion measure as the minimum standard is in line with the lowest average annual performance observed in the last four years.

11.271 We note that most respondents to the December 2013 LLU WLR Consultation support the immediate imposition of either the full minimum standards or higher standards than we proposed for the first two years in order to ensure a more rapid improvement in performance. Openreach on the other hand has concerns about its ability to meet the regional targets consistently based on recent performance.

11.272 Regarding the targets for the first and second years, we remain of the view that imposing the full minimum standards would give rise to a significant risk of failure. Equally, we consider that the additional flexibility we have built into the MBORC allowance should address Openreach’s concerns about its ability to meet the regional targets given the geographic variability of severe weather conditions. Therefore we do not consider it appropriate to reduce the minimum standards for the first year. We remain of the view that the proposed minimum standards for the first and second years strike a reasonable balance between the need to improve performance and the need for transitional measures to give Openreach time to make the necessary changes to achieve them. We also note that the additional funding for the service improvements is being introduced on a glide-path over the period of the control.

11.273 Whilst the minimum standards for the first year are below that which we consider appropriate for these services, we consider this necessary as a transitional measure. We also note that BT will need to aim above the minimum standards in order to be sure to meet them, and we would expect BT to make all reasonable effort to exceed these targets and to move as quickly as possible towards the minimum standards proposed for the final year (at least). We would also note that the minimum standard in the first year applies for the period July to March so that some of the traditionally less demanding months in terms of faults due to poor weather are excluded. We have not sought to determine a specific minimum standard linked to the period July to March as we consider that the data cannot provide a robust alternative.

11.274 We do not agree with Openreach that it would be appropriate to review the minimum standards for the second year after the first year as it would undermine the incentive for BT to make the necessary improvements in order to achieve the minimum standards in full by the third year.

11.275 Table 11.8 sets out the minimum standard for each of the three years, excluding the MBORC allowance that we have discussed above.
Table 11.8: Minimum standards showing transitional standards (excluding MBORC allowances)

<table>
<thead>
<tr>
<th>Minimum standards applicable to each of the 9 Openreach GM regions and Northern Ireland</th>
<th>First Year (July 2014 to March 2015)</th>
<th>Second Year</th>
<th>Final Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services within scope: WLR Care Level 1 and MPF Care Level 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repair Completion within SLA Timescales</td>
<td>70%</td>
<td>75%</td>
<td>80%</td>
</tr>
<tr>
<td>12 day provision appointment availability</td>
<td>55%</td>
<td>68%</td>
<td>80%</td>
</tr>
<tr>
<td>Provision completion by CDD</td>
<td>90%</td>
<td>90%</td>
<td>90%</td>
</tr>
</tbody>
</table>

Table 11.9 sets out the minimum standards for each of the three years including the MBORC allowance.

Table 11.9: Minimum standards showing transitional standards (including MBORC allowances)

<table>
<thead>
<tr>
<th>Minimum standards applicable to each of the 9 Openreach GM regions and Northern Ireland</th>
<th>MBORC allowance (included in the minimum standards)</th>
<th>First Year (July 2014 to March 2015)</th>
<th>Second Year</th>
<th>Final Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services within scope: WLR Care Level 1 and MPF Care Level 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repair Completion within SLA Timescales</td>
<td>3%</td>
<td>67%</td>
<td>72%</td>
<td>77%</td>
</tr>
<tr>
<td>12 day provision appointment availability</td>
<td>1%</td>
<td>54%</td>
<td>67%</td>
<td>79%</td>
</tr>
<tr>
<td>Provision completion by CDD</td>
<td>1%</td>
<td>89%</td>
<td>89%</td>
<td>89%</td>
</tr>
<tr>
<td>MBORC exemption arrangements</td>
<td>In assessing compliance we will exclude High Level MBORC declarations for 2 regions each year subject to a limit of 8 weeks to each High Level MBORC declaration.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11.277 As set out in Paragraph 11.199 in order to ensure that our cost modelling makes appropriate allowance for Openreach to deliver to service to at least the required minimum standards, we have incorporated a 3.9% resource uplift into our modelling. In 2016/17 this equates an increase of total network costs of £10.7 million.

Legal tests for the minimum standards

11.278 For the reasons set out below, we are satisfied that the conditions for BT in respect of each of the WLA and WFAEL markets in the UK excluding the Hull Area meet the various tests set out in the CA03.
11.279 Section 87(3) of the CA03 authorises the setting of SMP services conditions in relation to the provision of network access. Section 87(5) of the CA03 provides that such conditions may include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations contained in the conditions are complied with within the periods and at the times required by or under the conditions. In this regard we note Article 12(1) of the Access Directive, which provides that national regulatory authorities may attach to conditions relating to network access obligations covering fairness, reasonableness and timeliness. We consider that the proposed condition will assist in securing that network access is provided within a reasonable period of time.

11.280 In proposing these conditions, we have taken into account the factors set out in section 87(4) of the CA03. In particular, we consider that the imposition of the condition setting minimum standards is necessary to ensure an appropriate level of quality of service so as to secure effective competition, including economically efficient infrastructure based competition, in the long term.

11.281 We have considered our duties under section 3 of the CA03. We consider that, by ensuring that BT adheres to prescribed minimum quality of service standards in relation to the provisioning and the repair of faults, the condition will further the interests of citizens in relation to communications matters and further the interests of consumers in relevant markets by promoting competition.

11.282 We have considered the Community requirements set out in section 4 of the CA03. We consider that the condition will promote competition in relation to the provision of electronic communications networks and encourage the provision of network access for the purposes of securing efficient and sustainable competition in the markets for electronic communications networks and services.

11.283 We also consider that the condition meets the criteria in section 47(2) of the CA03. The condition is:

- objectively justifiable, in that its purpose is to ensure mandatory minimum standards in relation to key services supporting network access. The evidence available to us indicates that in the absence of other effective incentive mechanisms further regulation is necessary to secure an appropriate level of service by BT and the condition addresses this issue;

- not unduly discriminatory, in that it will only apply to BT, which we have identified as the only CP having SMP in the relevant markets in the UK excluding the Hull Area;

- proportionate, in that we have identified the need for further regulation and the conditions are targeted specifically to those areas for which regulation is required. We consider that the conditions are the least onerous means of achieving the objective we have identified of securing a minimum level of quality of service in the delivery of key aspects of network access. We have demonstrated that without intervention the level of service by Openreach has fallen below what we consider acceptable levels. Further, we will ensure that BT is funded to meet the required standard through the charge controls. We have also structured the conditions to take account of the impact of events outside BT’s control on its ability to meet the minimum standards we are imposing; and
• transparent, in that, in relation to what it is intended to achieve, it is the clear intention of the condition to ensure that BT maintains a minimum level of quality of service in relation to a number of key factors of importance to communication providers that buy these wholesale inputs and it is clear what those standards are.

11.284 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns, in line with section 87(1) of the CA03.

Consistency with the BEREC Common Position

11.285 In taking these decisions we have also taken utmost account of the BEREC Common Position. In relation to the objective of achieving a reasonable quality of access products (operational aspects), we have noted above that the BEREC Common Position identifies, among other things, as best practice that NRAs should require SMP operators to provide a defined level of service (BP32) to address the concern that access products may not be of reasonable quality and service levels may not be comparable between that provided to third parties and to the SMP operator’s own downstream operations.

Enforcement and penalty guidelines

11.286 In the July 2013 FAMR Consultation we stated that breaching the proposed minimum standards would "render BT subject to potential sanctions". This proposal was in line with our pre-existing policy concerning breaches of SMP conditions.

Summary of consultation responses

11.287 Sky, KCOM, TalkTalk, Verizon and Vodafone all emphasised the importance of the enforcement regime as a deterrent to breaches of the minimum standard.

11.288 TalkTalk, Sky and Vodafone called for Ofcom to publish guidance as to what would constitute a breach and what the likely level of fines would be. Sky

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732 Paragraph 10.310, Ofcom, Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - Consultation on the proposed markets, market power determinations and remedies, 3 July 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/summary/fixed-access-markets.pdf.
recommended that, when developing such guidance, Ofcom should take into account the following principles:

- the extent to which targets are missed;
- the duration of problems;
- any aggravating factors; and
- the frequency of any breaches.

11.289 KCOM stated that Ofcom should be prompt in taking any necessary enforcement action. It argued that this element of regulation (unlike, for example, the setting of charge controls) could not be adjusted retrospectively to the benefit of CPs, and it was therefore important to CPs that Ofcom acted quickly in response to any breaches.

11.290 TalkTalk argued that BT should expect a significant fine in the event of a breach and that it should be made aware in advance of the potential scale of fines. TalkTalk stated that Ofcom should set out the factors of which Ofcom would take account when determining the level of fines. TalkTalk also argued that the minimum standards should take effect from the introduction of the new charge control.

11.291 Sky further recommended that Openreach executive pay be linked in part to compliance with the minimum standard.743 Vodafone in its response to the July 2013 FAMR Consultation suggested throttling back the service given to BT’s retail divisions in the event of poor service.744

**Ofcom’s analysis and conclusions**

11.292 Ofcom’s Enforcement Guidelines745 and Penalty Guidelines746 set out the processes and procedures that Ofcom would take when undertaking an investigation into the breach of an SMP condition, and also the factors considered in the context of determining the level of any sanctions to impose in response to breaches of the minimum standard.

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11.293 The Penalty Guidelines\textsuperscript{747} also clarify the factors that Ofcom may take into account when determining penalties for breaches of SMP conditions. These factors include the degree of harm caused by a breach, its duration, steps taken to remedy the breach and whether it was intentional. The Enforcement Guidelines\textsuperscript{748} further state that any penalty may be up to 10% of the company’s relevant turnover.

11.294 As Ofcom is requiring BT to meet minimum standards for service quality for the first time, we consider it important to observe the effects of the new measures before considering whether it would be appropriate to publish further guidance on penalties for breaching the standards.

11.295 We note also Sky’s recommendation that executive pay is linked to minimum standards. We appreciate the attractiveness of these proposals but in practice we consider that it would not be appropriate or indeed possible for us to establish such a link. The obligations we impose are on BT not its employees, and it is a matter for BT to determine how it incentivises its employees to ensure it meets these obligations. However, we note that Openreach employees’ bonus structure is linked directly to the financial performance of Openreach and consequently, if breaches of its obligations led to financial penalties it would potentially impact on employee pay.

11.296 Similarly, we do not consider that it is appropriate to impose conditions on BT with respect to reducing service to BT’s retail divisions in the event of poor service, as proposed by Vodafone. While we accept that there is some evidence that some consumers will favour BT’s retail divisions in the event of general poor service quality, there is no direct evidence of bias in Openreach’s service delivery and it is clear that BT’s internal customers experience poor service in a similar manner to external customers. We would note that we are imposing a requirement on BT to supply network access on an equivalence of inputs basis which should address any discrimination concerns at the wholesale level.

**Transparency as to quality of service**

**Introduction**

11.297 In this sub-section, we set out our decisions to impose an SMP condition on BT and make a series of directions pursuant to this condition which require BT to provide various KPIs. The aim of imposing this SMP condition and these KPIs is to ensure appropriate transparency in the quality of the access services BT is providing (both internally and externally) both now and, if necessary, in the future.

11.298 We consider that the publication of a wide range of performance metrics regarding service provision provides an information base that allows the early identification of variations in the service quality that BT offers itself and its customers (and their potential causes). This allows for the identification of any potential discrimination in service provision and in doing so supports the network access and non-discrimination requirements we are imposing (see Section 10).

11.299 In summary, we are requiring BT to increase the range and granularity of the KPIs it provides to us and the industry. This will allow us to more closely monitor BT’s


performance and respond, if necessary, to any trends which are not consistent with a reasonable service standard.

11.300 The revised KPIs:

- extend the requirement that BT publish KPIs concerning WLR and ISDN services to LLU and GEA services;
- include a common core set of KPIs across WLR, ISDN2, ISDN30, LLU and GEA (including, for example, the number of repair and provisioning services affected by MBORC declarations);
- require more detail of BT’s performance at a regional level; and
- include new KPIs (in relation to WLR and MPF) which focus on monitoring BT’s management of services which are delivered late (i.e. ‘tails’).

11.301 With respect to the issue of ‘tails’, we are seeking to make sure that the establishment of the new performance standards does not encourage BT to reduce its focus on delivering all services as promptly as possible, even once the SLA has been passed, and in doing so favour its own downstream business.

11.302 BT will for the first time also be required to publish its performance against certain KPIs in order to allow public visibility of BT’s service performance. This will allow the public to understand the underlying service that their provider is receiving and help avoid relative differences in service quality between CPs which rely on the same BT wholesale service.

11.303 We set out a list of the KPIs, both for our use and public presentation, at the end of this sub-section in Table 11.13.

**Aim and effect of regulation**

11.304 Vertically integrated operators have the ability to favour their own downstream business over third party CPs by differentiating on price or terms and conditions. This discrimination could also take the form of variations in QoS (either in service provision and maintenance or in the quality of network service provided by the dominant provider to external providers compared to its own retail operations). This has the potential to distort competition at the retail level by placing third party CPs at a disadvantage in terms of the services they can offer consumers to compete with the downstream retail business of the vertically integrated operator.

11.305 We set out in Sections 3 to 7 our view that, in each of the WLA, WFAEL, wholesale ISDN2 and wholesale ISDN30 markets in the UK excluding the Hull Area, BT has the incentive and ability to discriminate in favour of its own retail businesses by offering more favourable terms which would give it a competitive advantage over other CPs and have a material adverse effect on competition. In order to support the proposed non-discrimination requirements and to further mitigate the risk of discrimination we consider that, for each of the wholesale fixed access markets outside the Hull Area, BT should be subject to an obligation to publish information as directed by Ofcom about the QoS of the network access it provides. The main benefit of this in wholesale markets is that other CPs can ensure that the service they receive from BT is equivalent to that provided by BT to its own retail divisions.
Proposals in the July 2013 FAMR Consultation and December 2013 LLU WLR Consultation

11.306 In each of the wholesale fixed access markets outside of the Hull Area, we previously required BT to “publish all such information for the purposes of securing transparency as to the quality of service in relation to network access provided by the dominant provider in such manner and form as Ofcom may from time to time direct”.749

11.307 In the July 2013 FAMR Consultation750, we explained that Ofcom had previously issued directions under this condition to impose specific KPI reporting requirements on BT in the WFAEL, wholesale ISDN30 and wholesale ISDN2 markets. Furthermore, we explained that we had not imposed specific KPI reporting requirements on BT in the WLA market, relying instead on the voluntary provision of information by BT to the OTA2 (the OTA2 subsequently publishes high level statistics related to total volumes, provisioning and repair and the provision of company specific information to their customers).

11.308 This variation in approach has contributed to significant differences in the provision of KPIs between access products. These differences, combined with changing KPI definitions, have made it difficult to track long term performance trends between similar services across different markets. Thus, they have made it more difficult to ensure non-discrimination between the various competing wholesale services that BT provides. This is particularly the case where, downstream, BT’s retail divisions use different input products to some other Openreach customers to deliver similar retail services, e.g. WLR and SMPF versus MPF.

11.309 In the July 2013 FAMR Consultation, we stated that it was important that there were a consistent set of high level KPIs across access services (WLR, LLU and GEA), given that such products can act as alternative means of providing services to end-users (e.g. WLR and SMPF, MPF and GEA). We therefore proposed to:

• continue to impose a condition on BT requiring it to publish all such information as to service quality in relation to network access in each of the WLA, WFAEL, ISDN2 and ISDN30 markets as Ofcom may from time to time direct;

• impose a range of specific transparency provisions by way of direction in each of the markets covered by this Statement. In relation to the WFAEL, ISDN2 and ISDN30 markets, we proposed to impose modified versions of those requirements to publish specific KPIs that are already in place. We also proposed to extend the requirements for BT to publish specific KPIs, as appropriate, to the WLA market (for LLU and VULA/GEA); and

• require BT to publish a common ‘core’ set of additional KPIs across each of the fixed access markets excluding the Hull Area, including new KPIs for:
  o the first available appointment (or FAD) that BT offers for provisioning. We considered this to be a more useful performance indicator than average

750 Paragraphs 10.257-10.259, Ofcom, Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - Consultation on the proposed markets, market power determinations and remedies, 3 July 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/summary/fixed-access-markets.pdf.
installation time KPIs (which can, by their nature, reflect delays brought about by customers/end-users); and

- the number of services affected by BT’s MBORC declarations where, as a result of such declarations, BT failed to deliver the service within the terms of the SLA. We considered this necessary to ensure that BT’s use of MBORCs would be open to scrutiny and that any trends or biases in the declaration of MBORCs would be visible.

11.310 We summarised the proposed minimum set of KPIs in Table 10.21 of the July 2013 FAMR Consultation and set them out in more detail in Annex 11 of that consultation.

11.311 As part of the proposed direction, we proposed that BT be required to publish a subset of KPIs (set out in Table 10.22 of the July 2013 FAMR Consultation) in a publicly accessible location. We considered this necessary in order to make service quality more transparent for end-users, specifically in relation to the installation of new lines and the repair of faults. We considered that this would help end-users to understand how their experience compares with the industry average, allowing them to make informed choices about the support they receive from their supplier. We also considered that this would help make end-users more aware of BT’s service quality performance and avoid misconceptions about relative differences in service quality between CPs which rely on the same BT wholesale services. We suggested that this information should be published on the OTA2’s website (which already publishes other BT data).

Ensuring that all services are delivered within a reasonable timescale

11.312 In the December 2013 LLU WLR Consultation, we proposed some further changes with regard to KPIs. We proposed to require BT to publish new KPIs to provide additional transparency about the ’tail’ of provisions and repairs (those orders for which BT failed to meet the minimum standards for service quality) on a national basis. We proposed this change to mitigate the risk that the minimum standards we were proposing could have unintended consequences for service quality, e.g. the risk that BT might invest resources in meeting repairs within the SLA target (which would contribute towards compliance with the minimum standard) to the detriment of repairs that are already outside the SLA. We also invited Openreach to respond to the consultation with proposals for their own targets for the delivery of the tail, noting that we would expect any targets to provide reassurance to end-users about what to expect in terms of the reasonable maximum timescale for repair or provision of a line, aside from in exceptional cases. ⁷⁵¹

11.313 We stated in the December 2013 LLU WLR Consultation that, if we observed a change in the expected tail (e.g. a clustering of late delivery away from the SLA date rather than a steady decline in the work stack, or any other material difference in the shape of the tail compared to previous years), we would at that point consider our options for intervention. We would, for instance, consider whether it would be

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appropriate to make a direction under SMP Condition 12 to specify additional minimum standards in respect of the repair and/or provisioning tail.  

11.314 We noted that BT currently tracks tails for provisioning and repairs on a +1, +5, +10 and +30 days basis (i.e. SLA+X days). Given the importance of public confidence in our service quality measures, we considered that these KPIs should form part of the set of KPIs that are made publicly available. Furthermore, in order to ensure that the scale of the tail is transparent, we also proposed to require BT to publish the total number of faults, requests for provisioning appointments and provisioning appointments scheduled. We proposed to discuss with BT how to present such KPIs publicly.

11.315 In order to avoid unnecessary duplication in terms of reporting, we also proposed to remove the ‘timing of fault repair’ KPI (which we had proposed in the July 2013 FAMR Consultation) where we were proposing new tail KPIs (namely, in relation to MPF and WLR).

11.316 We also proposed to amend the proposed KPIs to require BT to report any regional figures (where directed) in relation to BT’s 9 GM regions and Northern Ireland, rather than BT’s 26 forecasting regions and Northern Ireland (as we had originally proposed in the July 2013 FAMR Consultation).

Stakeholder responses to the July 2013 FAMR Consultation and December 2013 LLU WLR Consultation

11.317 In general, most of those stakeholder responses to these proposals were supportive, though some raised issues for further consideration.

Imposing a transparency as to quality of service requirement in the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets/extending directions for specific KPIs to LLU and GEA services

11.318 Subject to the comments set out below, EE, the FCS, KCOM, Verizon and Virgin supported our proposals to impose a condition in relation to the transparency of service quality in the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets and to extend the directions relating to specific KPIs to LLU and GEA services.

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One respondent questioned what Ofcom considered to be a reasonable timeframe for publishing KPI information. It argued that the data was only useful if published quickly, potentially within 14 days of the relevant period.

Vodafone stated that it would like to see a split of KPIs across business and residential markets. provided a list of measures agreed by those CPs involved in the BMSIP industry working group. It stated that it would like Ofcom to impose a mandatory requirement for Openreach to report these measures against targets agreed by industry. Vodafone added that an agreed corrective action plan should be put in place for any measure for which Openreach does not meet targets.

Openreach agreed with, and BT Group raised no objection to, the imposition of information reporting requirements in the relevant markets. However, neither agreed with our proposal to extend the directions to require BT to publish specific KPIs on LLU and GEA:

- Openreach stated that the inconsistency in KPI reporting was already being addressed by the voluntary publication, since July 2012, of performance indicators across copper products and that this could be extended voluntarily where appropriate;
- Openreach also suggested that uptake of GEA-FTTP was so low that it was not necessary to extend the direction to this service (at least until there were at least 100,000-500,000 of such lines installed); and
- similarly, BT Group stated that the issue of consistency and extension to GEA could be addressed by industry voluntarily, rather than being mandated by Ofcom.

Including a common 'core' set of KPIs in each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 in respect of WLR analogue and digital, LLU and GEA services.

Openreach, BT Group, EE, the FCS, KCOM, Sky, Virgin, and Vodafone were all supportive of the proposal for a common core set of KPIs across these services.

759 Paragraph 21, Vodafone response to the July 2013 FAMR Consultations,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Vodafone.pdf.

760 Paragraphs 279-280, Openreach response to the July 2013 FAMR Consultation - quality of service,

761 Paragraph 218, BT response to the July 2013 FAMR Consultations,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.
11.323 However, BT Group argued that the specific content of KPIs should continue to be industry negotiated. It stated that, for comparison purposes, WLR+SMPF should be compared with MPF, while fibre should be displayed with and without provision of a WLR line.  

11.324 Openreach stated that it reported KPIs voluntarily as part of its monthly industry service pack (the content of which had been agreed with Ofcom and the OTA2 in 2012). It further stated that Ofcom had not justified changes to the existing set of mandated KPIs (by way of changes to definitions) or to new KPIs.  

11.325 Openreach submitted that Ofcom had not consulted appropriately as we had not set out the (individual) case – and requested feedback – for mandating each proposed KPI. Openreach also stated that, with the exception of the introduction of volume metrics for services affected by MBORCs, we were not consulting on whether the proposed set of KPIs were the right set of KPIs to implement.  

11.326 In terms of reporting, Openreach submitted that we had not justified our new proposal that some UK-wide KPIs be split on a regional basis. However, it stated that (subject to Ofcom objectively justifying the need for regional reporting) the nine operational GM regions (which it already used to report some performance service measures) were a potential alternative to our proposal to use BT’s 26 forecasting regions and Northern Ireland as the basis for reporting. It also noted that, if Ofcom proceeded with its proposals, then it should allow a reasonable time period for

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766 Paragraph 289, Openreach response to the July 2013 FAMR Consultation - quality of service,

767 Paragraph 219, BT response to the July 2013 FAMR Consultation,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.

768 P.11, EE response to the July 2013 LLU WLR Consultation,

769 P.4, FCS response to the July 2013 FAMR Consultation,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Federation_of_Communication_Services_Ltd.pdf.

770 [sic]

771 P.12, KCOM response to the July 2013 FAMR Consultation,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/KCOM.pdf.

772 Paragraphs 5.6-5.7, Sky response to the July 2013 FAMR Consultation - quality of service,

773 P.13, Virgin response to the July 2013 FAMR Consultation,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Virgin_Media.pdf.

774 Page 21, Vodafone response to the July 2013 FAMR Consultation,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Vodafone.pdf.

775 Paragraphs 219-220, BT response to the July 2013 FAMR Consultation,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.

776 Paragraphs 289-295, Openreach response to the July 2013 FAMR Consultation - quality of service,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach_-_KPIs.pdf.

777 Paragraphs 290-295, Ibid.

778 Paragraph 1, Openreach response to the July 2013 FAMR consultation - Annex 1: review of Ofcom’s proposed KPIs,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach_-_KPIs.pdf.
implementation in those cases where new KPIs were being introduced and, therefore, the development and testing of new reporting methods may needed.\textsuperscript{779}

11.327 Openreach argued that our proposals would result in an 8-fold increase in the number of mandated KPIs, creating greater complexity and additional costs for Openreach. Openreach also stated that Ofcom had argued for the introduction of additional KPIs by reference to Openreach’s information retention policy; Openreach’s policy, it argued, was not an objective justification for requiring the collation and publication of KPI figures in future.\textsuperscript{780}

11.328 Openreach also questioned why Ofcom had not withdrawn the average installation time measures, given that Ofcom had stated that the new appointment availability KPI for WLR, wholesale ISDN2, wholesale ISDN30, MPF and VULA was a “better measure of Openreach performance than average provisioning periods (which by their nature include delays caused by customers)”.\textsuperscript{781} Openreach made other detailed points with regard to our proposed KPIs, as set out in Table 11.10, below: for example to request changes to (or clarifications of) KPI definitions.\textsuperscript{782}

11.329 Sky provided a list of additional KPIs which it considered appropriate for inclusion in the mandated KPIs. Most of these suggested KPIs were related to provisioning.\textsuperscript{783} The FCS stated that it would also be helpful to provide customer satisfaction statistics to support KPI information.\textsuperscript{784}

New KPI relating to the number of services affected by MBORC declarations

11.330 BT Group\textsuperscript{785}, EE\textsuperscript{786}, KCOM\textsuperscript{787}, Sky\textsuperscript{788}, Verizon\textsuperscript{789}, Virgin\textsuperscript{790} and Vodafone\textsuperscript{791} supported this proposal.
11.331 [\textsuperscript{792}] suggested that Openreach regularly abused the MBORC declaration process to lessen its SLG liabilities, which, it argued, were a consequence of underlying performance issues. [\textsuperscript{792}] urged Ofcom to undertake a review of the use of MBORC declarations, using its powers under s135 of the Act to ascertain whether they are misused. [\textsuperscript{792}] considered that each declaration of MBORC should be independently reviewed and verified, as necessary and proportionate.

11.332 Openreach did not accept that our proposal would make any potential trends or biases more visible. It stated that the volume of services affected by MBORCs over a given reporting period would ultimately depend on a number of factors. It also stated that the impact of MBORCs on CPs would depend on CPs’ geographical footprint. An individual CP’s experience of MBORC declarations could, therefore, differ greatly from that which industry aggregate figures would suggest it should experience.\textsuperscript{793}

Publication of some KPIs for the public and the location of this information

11.333 EE\textsuperscript{794}, FCS\textsuperscript{795}, KCOM\textsuperscript{796}, Openreach\textsuperscript{798}, Verizon\textsuperscript{799} and Virgin\textsuperscript{800} all supported our proposal for the publication of a subset of QoS KPIs for consumers and some stressed the need for the information to be provided in a consumer friendly, easy to understand format.

11.334 Sky argued that Ofcom should expand the requirement to SMPF and VULA/GEA, as well as WLR and MPF.\textsuperscript{801}

11.335 EE supported publication on the OTA2 website for the use of CPs, but considered that CPs should be left to determine how best to present this information to their end-users at the retail level.\textsuperscript{802} Openreach stated that it should be the CPs’ responsibility to make their performance results available to their own consumers and to explain to

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{792} Paragraphs 297-299, Openreach response to the July 2013 FAMR - quality of service, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach_-_Quality_of_Service.pdf;
\item \textsuperscript{794} P.11, EE response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf;
\item \textsuperscript{795} P.4, FCS response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Federation_of_Communication_Services_Ltd.pdf.
\item \textsuperscript{796} Paragraph 304, Openreach response to the July 2013 FAMR Consultation - quality of service, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach_-_Quality_of_Service.pdf;
\item \textsuperscript{797} P.13, KCOM response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/KCOM.pdf.
\item \textsuperscript{798} Paragraph 32, Verizon response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Verizon.pdf.
\item \textsuperscript{799} P.13, Virgin response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Virgin_Media.pdf.
\item \textsuperscript{800} Paragraphs 5.8, Sky response to the July 2013 FAMR Consultation - quality of service, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Sky_Quality_of_Service.pdf.
\item \textsuperscript{801} P.12, EE response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.
\end{itemize}
\end{footnotesize}
their consumers how Openreach performance related to their own. It also considered that it was unclear how the proposals would facilitate this dialogue.  

11.336 Openreach considered that the proposal needed further consideration so as to take account of the lessons of the 2009 Ofcom review of the Topcomm scheme. It asked Ofcom to carefully consider:

- how Ofcom could ensure that consumers were aware of the publication. Otherwise, Openreach considered that the proposal would not achieve Ofcom’s stated objective of “making consumers aware of Openreach’s underlying performance and potentially removing any misconceptions that BT Retail is a safer option”; and

- whether CPs can play a role in ensuring that consumers are aware of service quality reporting, e.g. by publishing their own performance indicators and linking to the OTA2 website for information on underlying Openreach performance.

11.337 BT Group argued that the publication of Openreach KPIs would be confusing and potentially misleading for consumers. It considered that the information was of interest only to CPs (because Openreach products and services such as WLR and MPF were input products for CPs and formed only part of the overall retail services for consumers).

11.338 With regard to the best location for publication of the KPIs, some stakeholders supported publication on the OTA2 website, although KCOM stated that publication by Ofcom would be more useful. Virgin suggested that Ofcom might publish the information with a disclaimer that it had not endorsed or approved it.

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804 Paragraphs 304 and 308-309, Openreach response to the July 2013 FAMR Consultations - quality of service, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach_-_Quality_of_Service.pdf. Topcomm was a co-regulatory scheme/website that ran from 2006-2009. It published information on how its membership of fixed telecoms operators performed with regard to service quality, including on fault levels, speed of repairs and installing new lines. It was closed after a review found that it was not providing significant value or benefit to consumers. There was low customer awareness of its existence and little promotion of the site by scheme members. See http://stakeholders.ofcom.org.uk/consultations/topcomm/statement/.


Sky\(^\text{809}\) suggested that Ofcom could draw attention to the information by accompanying its publication with a commentary or press release.

11.339 [\(\times\)]\(^\text{810}\) requested that Openreach publish a public, monthly “plain English” statement that reports on the current status of its service delivery.

**KPIs to provide additional transparency about the ‘tail’ of provisions and repairs**

11.340 In response to the December 2013 LLU WLR Consultation, Openreach\(^\text{811}\) stated that it considered our proposal to require it to publish the WLR and MPF tail KPIs on a national basis to be appropriate. It stated that to require it to report KPIs not associated with the minimum standard on a regional basis would be disproportionate and confusing for end-users. It proposed to help Ofcom refine the KPI definitions in the cases of timing of fault repair and timing of appointed orders not provisioned on time (in both cases for WLR and MPF). Openreach stated that this would be desirable to make them consistent with one another, better measures of the volume of repairs/orders outside SLAs at given points in time and to allow Openreach to collect them without implementing changes to its reporting systems.

11.341 Openreach stated that it was in the process of developing performance targets with regard to the tail. It also stated that careful consideration should be given to how to make the KPIs useful for a wide variety of end-users unfamiliar with industry terminology.\(^\text{812}\)

11.342 Virgin stated its concern that our proposed approach of imposing tail KPIs while allowing Openreach to set its targets for reducing the tail would mean that Openreach de-prioritised its efforts to reduce the tail. It stated that it may be appropriate to allow stakeholders an opportunity to comment on Openreach’s proposed standards.\(^\text{813}\)

11.343 KCOM\(^\text{814}\) and [\(\times\)]\(^\text{815}\) welcomed Ofcom’s efforts to encourage Openreach to address the tail. However, [\(\times\)]\(^\text{815}\) considered that it could not comment on the efficacy of the proposed tails KPIs without further information about how Ofcom would respond to a breach of the minimum standard. Vodafone stated that it would be proportionate and appropriate for BT as a general rule to report KPIs at a regional level, as well as in relation to different service levels, in order to better inform end-users’ purchasing decisions. It also proposed that a KPI should underpin its suggested additional
minimum standard (that 98% of all repair and provisioning jobs be completed within a month).  

Our analysis and conclusions

Imposing a transparency as to quality of service requirement in the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets / extending directions for specific KPIs to LLU and GEA services

11.344 We have decided to proceed with our proposal to impose a transparency as to QoS requirement in each of the wholesale fixed access markets. We have also decided to direct BT under this condition to publish certain KPIs. This has the effect of re-imposing the existing KPI reporting requirements in the WFAEL, wholesale ISDN2 and wholesale ISDN30 markets alongside certain new requirements, and extending these to the WLA market (for LLU and VULA/GEA). The corresponding SMP condition and the directions implementing these KPIs are contained at Part I and Part III (respectively) of the Legal Instrument in Annex 29. We continue to consider this necessary to ensure that Ofcom can track long term performance trends between similar services across different markets and to ensure non-discrimination between the various competing wholesale services provided by Openreach.

11.345 As set out in the July 2013 FAMR Consultation, we consider it appropriate to require BT to publish the KPI information within 14 working days of the relevant period of service performance.

11.346 Ofcom welcomes the progress that has been made voluntarily with regard to KPI reporting. However, we consider that mandating the collection of specific KPIs is necessary in order to ensure that a minimum set of consistent KPIs are quickly delivered which cover all the elements of service delivery that we consider need to be monitored. Requiring consistency with regard to specific KPIs will help us monitor performance trends across different markets and enable us to identify whether there is any discrimination between the various competing wholesale services provided by Openreach.

11.347 With regard to business KPIs, we note that the BMSIP has set up working groups to implement process improvements to address business-specific requirements. Furthermore, it has defined a set of business specific KPIs, which will be reported to the OTA2 Service Management Forum. Ofcom recognises the importance of these industry KPI developments. While these are progressing and the requirements for service levels and related measurements are being determined commercially, we do not consider that it is appropriate to impose specific regulations for the presentation of business KPIs. However, given the importance of ensuring that Openreach services support UK business effectively, we will be actively monitoring progress in this area and if we consider that an intervention is required we may choose to direct BT to present further KPIs.

11.348 We note Vodafone’s request for the establishment of targets for KPIs and a mechanism for responding to failure to meet such targets. However, we consider this confuses the purpose of KPIs to provide visibility of service with the separately
discussed minimum standards. KPIs are clearly not intended as targets (this is the role fulfilled by the minimum standards) and we do not think it would be appropriate at this point to mandate further minimum standards. Similarly, therefore, it would not be appropriate for us to automatically impose a corrective action plan without a careful consideration of the facts of any service outcome.

11.349 We consider it appropriate to proceed with implementing the requirement for BT to report specific KPIs with regard to GEA-FTTP. However, we recognise that current low uptake of GEA-FTTP due to its recent introduction to the market may mean that regional figures are not currently meaningful. We have therefore amended the relevant direction to require KPI reporting for GEA-FTTP at a national level at this stage and only at a regional level once a threshold of 100,000 such lines are installed in the relevant region.

11.350 We accept the value of having customer satisfaction measures as suggested by the FCS but we do not consider it is proportionate to require such a measure from Openreach given they do not have direct contact with end-customers.

Including a common set of KPIs in each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 in respect of WLR analogue and digital, LLU and GEA services

11.351 We welcome stakeholders’ broad support for these proposals. We have decided to proceed with our proposal to require BT to publish a common core set of KPIs across the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets, by way of direction made under SMP Condition 11. These KPIs are to be provided on a monthly basis to Openreach’s third party customers and to Ofcom, 14 working days after the end of the relevant month.

11.352 We have amended our proposed KPIs in light of stakeholders’ comments on the detailed drafting of the KPIs. In addition we will require BT to report some service quality KPIs by region using its GM regions, plus Northern Ireland. As noted above, we will initially require BT to meet the KPI reporting requirements for GEA-FTTP on a national basis and only regionally once 100,000 aggregate lines are installed in that region.

11.353 We recognise that BT may have to develop and test KPI information collection in some cases, e.g. for GEA. We therefore consider it appropriate to allow a two month implementation period for new mandatory KPIs and the revised existing KPIs. We have set a date of 18 September 2014 (i.e. 14 working days after the month end) for BT to publish these new mandatory KPIs. However, we would expect existing KPIs to be continued to be reported with no break.

11.354 We consider that we have consulted properly on the substance of the proposed KPIs and our rationale for proposing to introduce them. It is our view that we have provided sufficient information to enable stakeholders to give intelligent consideration of our proposals and to respond effectively to the consultation. Stakeholders had the opportunity to comment on the specific KPI requirements in response to the July 2013 FAMR Consultation and the December 2013 LLU WLR Consultation.

11.355 We consider that our proposals are objectively justified in order to bring consistency to KPI reporting, to track long term performance trends between similar services across different markets, to improve service quality transparency and in doing so to
ensure non-discrimination between various competing wholesale services provided by Openreach. 817

11.356 Specifically we consider that in light of industry concerns over provisioning and repair of services, the level of faults recorded, Openreach’s own concerns over trends in faults and the cost of management of services, the current level of transparency is not sufficient.

11.357 We consider the current focus on WLR-only KPIs does not allow us to determine whether the trends apply equally to LLU or emergent GEA services. We observe from the work undertaken in this review that there are at times differences in the outcomes in terms of faults and QoS measures between services. It is critical that such differences can be observed and, if consistent, investigated.

11.358 As noted above, we consider that each of our KPIs is objectively justified and proportionate. In particular, we are of the view that the KPIs required under:

- Part 1 of our directions (‘Indicator’ KPIs) are necessary in order to enable us to monitor Openreach’s general performance in relation to provisioning and repairs, to identify any concerning trends in relation to such performance and, in particular, any potential discrimination in service provision (as well as to provide transparency to industry on such matters). As a result, these KPIs support the network access and non-discrimination requirements we are imposing;

- Part 2 of our directions (‘Volume’ KPIs) are necessary in order to interpret the information provided pursuant to the Indicator KPIs. Further, in paragraphs 11.368 to 11.370 below, we explain why our new KPIs relating to the volume of services affected by MBORC declarations are necessary; and

- Part 3 of our MPF and WLR directions (tail KPIs) are necessary for the reasons set out in paragraphs 11.371 and 11.372 below.

11.359 The new KPIs requested have largely been based on the existing WLR metrics which, from experience, we were able to identify as key aspects of services delivery. Where we have made changes and additions, in terms of geographic differentiation, MBORC, or tail information, this has been done in response to concerns with respect to inconsistency in delivery standards nationally, concerns over BT incentives in their declaration of force majeure or new concerns arising with respect to BT incentives following the imposition of new minimum standards (we discuss the MBORC and tail requirements in more detail below).

11.360 In order to minimise the cost and complexity of reporting we have worked closely with BT to ensure that the KPIs requested reflect existing data collection measures used by BT.

11.361 While we are increasing the number of mandated KPIs, we do note that BT is already providing a number of KPIs on a voluntary basis to industry and Ofcom. We accept

817 Similarly, while we made reference to Openreach’s information retention policy (with regard to the possible deletion of significant data) in the July 2013 FAMR Consultation when discussing the mandating of KPIs, this does not form part of the justification for our proposals related to delivering consistent KPIs, improving transparency and ensuring non-discrimination.
that additional KPIs do add additional burden on BT. However, we consider this to be necessary and proportionate in light of the importance of disclosing these KPIs.

11.362 We also note the importance of reporting these KPIs on a regional basis. It is clear that there is a risk of substantial variation in service delivery between regions. There is therefore a significant risk that such variations would be hidden in national averages, allowing long terms service issues to be masked. Given the importance of ensuring that quality of service is nationally consistent and that BT is not able to trade off performance in different regions, we consider it is essential that KPIs expose regional variations.

11.363 Finally while we consider that the new appointment availability measure is more useful than average installation time, we view information about average installation time as a necessary complement which provides a valid measure of the overall cycle time for providing a service. We therefore consider it necessary to require both of these KPIs.

11.364 In relation to Openreach’s more detailed points, we have responded to these in Table 11.10 below.
Table 11.10: Additional Openreach comments on the KPIs proposed in the July 2013 FAMR Consultation

<table>
<thead>
<tr>
<th>Additional Openreach comments</th>
<th>Ofcom response</th>
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<tr>
<td>“The definition of WLR KPI(iii) and ISDN2 and ISDN30 KPI(ii) - percentage of orders provisioned on time has changed from separate results for newly provisioned lines and transferred lines to aggregate results for all orders. This is an actual change to the reporting requirement which will require a change to the existing report. This will no longer align with the volume reporting where the definition of WLR, ISDN2 and ISDN30 volume (ii) - orders completed remains unchanged covering newly provisioned lines and transferred lines. Furthermore it is not clear from the definition of orders whether the amended KPI requirement applies to all provision orders (including migrations/transfers and working line takeovers) or new line provision orders only”.</td>
<td>We have changed the wording of WLR, wholesale ISDN2 and wholesale ISDN30 KPI(iii) (percentage of orders provisioned on time) so that BT is required to provide separate figures for newly provisioned lines and transferred lines as well as an aggregate figure for all orders.</td>
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Making this change will align this KPI with existing Openreach reporting and with the volume of orders completed KPI (which is provided on the basis of newly provisioned lines and transferred lines) while also ensuring that we obtain similar information to that provided pursuant to the LLU and VULA KPIs (namely, for all orders). |

Given the technical characteristics of LLU and VULA, we do not precisely mirror this KPI for LLU and VULA services (it will remain reportable by reference to all orders only). For this reason, we have also changed the wording of MPF, SMPF and VULA KPI(ii) (volume of orders completed) such that BT is only required to provide this information in the form of an aggregate figure for all orders. |

“We have reviewed our proposal for WLR KPI(iv) and wholesale ISDN2 and wholesale ISDN30 KPI(iii) - percentage of orders reported as faulty has changed from applying to new provisions only to applying to all orders. This is also a change to the reporting requirement which would require a change to the existing report. The same comment on order definition as above applies. In addition it should be noted that the relevant period for the submission of subsequent faults is 30 calendar days for WLR (including ISDN2 and ISDN30) and 28 calendar days for LLU and GEA. This would need to be reflected in the measure definition should Ofcom decide to mandate the KPI for LLU and GEA”. | We have reviewed our proposal for WLR KPI(iv) and wholesale ISDN2 and wholesale ISDN30 KPI(iii) (percentage of orders reported as faulty) in light of Openreach’s comments and now consider that it would be preferable to require separate figures for newly provisioned lines and transferred lines (the types most likely to generate ELF) as well as a figure for all orders. As with the percentage of orders provisioned on time KPI, this will enable us to obtain more detailed information in relation to newly provisioned and transferred lines whilst also ensuring that we obtain similar information to that provided pursuant to |

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818 Openreach’s comments in this table are set out in Openreach response to the July 2013 FAMR consultation - Annex 1: review of Ofcom’s proposed KPIs, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach_-_KPIs.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach_-_KPIs.pdf).
Given the technical characteristics of LLU and VULA, we do not precisely mirror this KPI for LLU and VULA services (it will remain reportable by reference to all orders only).

We have also changed the relevant period for subsequent LLU and GEA faults to 28 days to reflect current reporting practice.

“The definition of WLR KPI(v) and ISDN2 and ISDN30 KPI(iv) – percentage of installed base reported as faulty has changed from being limited to network faults (faults cleared in the Openreach network) to applying to all faults. The existing measure would need to be changed”.

“Our intention is that the measures should include all faults relating to each wholesale service. In the case of WLR and wholesale ISDN services they should therefore include exchange faults as well as Openreach access network faults. Therefore we have not amended the proposed KPIs.

Openreach would appreciate if Ofcom could clarify what is meant by the terms packages or services in relation to the relevant products. Furthermore, it is not clear what the requirement actually is and whether:

- It is in addition to item 1 (provision of an industry average for the aggregated products – all variants included) and item 2 (provision of downstream BT separate results).
- It is replacement for items 1 and 2 when product variants exist (e.g. WLR analogue Basic and Premium)”. We agree with Openreach that it would be preferable for these KPIs to include product transfers, as well as transfers between CPs. We have therefore modified the definitions accordingly.

“[The definition for transferred lines in the proposed KPI directions] appears to be limited to transfer of a given product from one CP to another. Openreach believes that this definition is too narrow and should be expanded to include transfers of one product provided by one CP to a different product provided by another CP (e.g. WLR CP1 to MPF CP2)”.

Our intention is that BT should be required to publish separate KPIs for each of the wholesale services that it offers to third parties, in addition to the aggregated set and the BT-specific results. To make our meaning clearer, we have modified the definitions to state ‘should also’ rather than just ‘should’.

We understand that our original reference to ‘packages’ in that part of the directions entitled ‘Indicators’ had the potential to cause confusion and may have been interpreted unnecessarily restrictively. We have therefore replaced this with the term ‘services’. 
"The percentage of repeat faults KPI makes reference to a relevant period of 30 calendar days. It should be noted that this is correct for WLR (including ISDN2 and ISDN30) but that the relevant period for LLU and FTTC is 28 days. This would need to be reflected in the measure definition should Ofcom decide to mandate the KPI for LLU and GEA”.

In light of Openreach’s comments we have amended the relevant period for subsequent LLU and GEA faults to 28 calendar days to reflect current reporting practice.

"Ofcom has provided a definition for newly provided lines in the schedule for the KPI directions for WLR, ISDN2 and ISDN30. The definition is missing from the schedule for the KPI direction for LLU and VULA. To the extent that one of the volumes required covers newly provisioned lines, the definition should be added to the final version of the schedule”.

We have added the definition to the LLU and VULA schedules.

The percentage of appointed orders provisioned on time KPI is currently only included in the KPI directions for VULA, MPF and WLR. Openreach suggested it also be included in the ISDN2 KPI direction.

This absence was inadvertent. We have added the KPI to the wholesale ISDN2 direction to ensure consistent reporting.

Openreach suggested the appointment availability KPI also be included in the ISDN2 KPI direction (it is included in the ISDN30 KPI direction).

We have added the KPI to the wholesale ISDN2 direction to ensure consistent reporting.

11.365 While assessing Openreach’s points above, we noticed an inconsistency in our definition of a standard fault within the minimum standard condition compared to the definition of a fault for the purposes of the KPIs. We have now aligned these definitions so that both include all faults relating to the relevant service, reflecting the current SLA definitions which are the basis of the minimum standards.

11.366 With regard to BT Group’s suggestion that WLR+SMPF should be compared with MPF and that fibre should be presented with and without provision of a WLR line, we consider that, for those KPIs the publication of which is restricted to industry stakeholders, there is sufficient understanding of the relationships between the services when reviewing the KPIs not to require specific linkages. If we subsequently increase the range of KPIs publicly available, we will need to consider how to address this issue.

11.367 With regard to Sky’s list of proposed additional KPIs, we do not consider that it would be appropriate to expand the mandatory KPI list to incorporate these detailed KPIs. We are already extending the mandatory requirement for KPIs – including adding a KPI for the first available appointment for provisioning – and we consider that it would be more appropriate to defer any further extension of the KPIs until after we have implemented our current proposals and had time to consider their impact.\(^{819}\) Stakeholders can of course, in the context of industry fora, raise the issue of additional relevant KPIs with Openreach which Openreach may choose to provide voluntarily.

\(^{819}\) For similar reasons, we will not mandate customer satisfaction information as part of the KPIs.
New KPIs relating to the number of services affected by MBORC

11.368 In response to the industry concerns set out above, we will require BT to report on the number of services affected by MBORC declarations (where such declarations have led to the delivery of services outside the SLA) as part of the common core set of KPIs for WLR and WLA services. We will continue to monitor MBORC declarations over the next charge control period. It is important that we are able to identify any changes in BT’s behaviour with regard to MBORCs to allow us to monitor the impact of such declarations on the minimum standards we have set (see below), including any possible discriminatory behaviour. Thus we consider it necessary to mandate the MBORC KPIs. It would be difficult to recognise potentially significant trends in MBORC declarations without this data. In addition to this, we will as part of our compliance programme also be requesting more detailed information on MBORCs under our statutory powers.

11.369 We note that MBORC declarations are the subject of wider industry discussion and allegations of misuse. While we note the industry concerns set out above about MBORC declarations, the lack of historical datasets and trend information on MBORCs is a significant impediment to further analysis. Therefore we do not consider that a review of MBORC could be meaningfully undertaken at this time. In the absence of clear evidence of the misuse of MBORC declarations, neither do we currently consider it would be proportionate or feasible for Ofcom to review every declaration of MBORC, particularly as the issue affects, at most, 5-6% of total repairs (as evidenced in 2012/13820).

11.370 We note Openreach’s concern about measuring MBORC, and we accept there is a danger of drawing too much from any short term variations in the KPI, but we consider that, over a long term, trends should be able to be determined.

New KPIs relating to late provisioning and repair (‘tail’ KPIs)

11.371 We have imposed new KPIs on Openreach with respect to the tails (i.e. the provisioning and repair requests that are not delivered within the SLA). We are seeking this information to ensure that there is transparency in the treatment of services which fall outside our minimum service standards and, in particular, to identify any possible discrimination in this regard. Absent such transparency, we consider that there is a risk that Openreach may have an incentive to neglect such services in order to ensure compliance with the minimum standards more generally to the detriment of third party CPs. While the existence of the KPIs does not in itself remove the risk of such prioritising of resources, we consider that Openreach would be less willing to make such a decision if the impact were visible to the industry and the public (see below). Further, we would also be in a position to respond to any evidence of such prioritising of resources or discrimination in the future through further action, including the imposition of further minimum standards pursuant to SMP Condition 12. We also consider that this transparency would reduce the risk of discrimination of resource use between WLR and MPF. However, in order to ensure that the imposition of these KPIs is proportionate and to minimise the cost of their provision, we have modelled the tail KPIs on existing Openreach internal reporting.

820 We note that the weather conditions were particularly challenging in 2012/13 for Openreach. For example the average rainfall was significantly above recent and long term average levels as set out in Annex 20.
11.372 The tail KPIs we set out in the July 2013 FAMR Consultation were intended to reflect the existing data collection measures currently used by BT. In response to the July 2013 FAMR Consultation BT explained that our proposed KPIs did not achieve this in certain respects, and consequently the KPIs we are imposing have been revised to conform broadly to the equivalent data collection measure currently used by BT.

Publication of some KPIs for the public and the location of this information

11.373 We have directed BT to publish a subset of KPIs on a BT Group website shortly after the publication of this Statement in order to improve transparency to end-users, specifically in relation to the installation of new lines and the repair of faults.821

11.374 While we welcome stakeholders' broad support for the publication of a subset of KPIs in a location where it would be accessible to the public, we note Openreach’s and other stakeholders’ concerns about the interpretation of this data. We also note the concerns raised by Openreach about the joint responsibility they have with CPs for some elements of service delivery. We recognise the importance of conveying the information in a straightforward, easy to understand manner which, as far as possible, does not risk misleading or confusing consumers. We are therefore working closely with Openreach to ensure that the publication of the KPIs meets these objectives and ensure that information is appropriately explained and caveated.

11.375 We have directed BT to publish these KPIs on its website every 3 months in relation to the preceding 3 months. For BT to comply with our direction, the KPIs may be published up to 14 working days from the end of the relevant 3 month period. We have set a date for publication of 20 October 2014 for the first report, although we will work with Openreach to produce it as soon as possible.

11.376 We consider that 3 months is an appropriate amount of time for BT to collect and present the information clearly, however we will continue to review this frequency.

11.377 We note that we previously suggested that publication may be presented on the OTA2 website. On reflection, we consider that this risks confusion as to the ownership of the data and the responsibility for service delivery. Accordingly, we consider that a website clearly related to BT is more appropriate. We expect that the OTA2 will continue to produce metrics relevant to the industry.

11.378 We note BT's suggestion that we encourage CPs to publish QoS data directly. We will continue to discuss such disclosure with CPs but we are unable to direct such information provision as part of this review.

11.379 We do not agree that we should extend the publicly available subset of KPIs to GEA and SMPF at this stage, given the risk that this would make the information inappropriately complex for end-users. However, we would be prepared to re-examine the case for extending the subset of KPIs to other products in future. We may do so, for example, in light of greater take up of GEA services or when the effects of the publication of KPIs on consumer awareness are better understood.

11.380 We have, however, in response to stakeholder concerns over consumer confusion considered the range of KPIs proposed for publication. We consider that there was a

821 See Tables 11.11 and 11.12 for a list of KPIs to be published on BT’s website.
risk that some of the KPIs were unlikely to be easily interpreted by consumers or their similarity to other KPIs may give rise to confusion.

11.381 Accordingly, we have decided to remove the requirement for publication from the following for the reasons given below, though we will continue to require Openreach to provide this information to us:

- **ELF rates (Percentage of orders reported as faulty)**: we consider that there is a risk of mis-interpretation of these statistics by the general public. We appreciate that there is CP interest in ELF issues but we consider that the information presented by the OTA2 and its ongoing review in this area is more appropriate for meeting this requirement;

- **Overall average installation time**: we will be requiring publication of average installation time for appointed orders and separately for non-appointed orders, which we consider is sufficient;

- **Average time to restore a service with a Service Level 3 contract and the percentage of faults restored on time where the service has Service Level 3 contract**: we do not consider Service Level 3 services are relevant to most consumers and there is already a risk that the explanation of the differences in Service Level 1 and Service Level 2 will lead to some consumer confusion as to the standard they might expect; and

- **Appointed orders that were not completed**: we do not consider that this KPI is meaningful to the public.

11.382 The KPIs we now consider are required for publication on a BT Group website are set out in Tables 11.11 and 11.12, below:
<table>
<thead>
<tr>
<th>KPI Direction</th>
<th>KPI requirement for WLR</th>
<th>KPI requirement for MPF</th>
</tr>
</thead>
<tbody>
<tr>
<td>KPI(iii)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For the UK as a whole.</td>
<td>Percentage of orders provisioned on time</td>
<td>The percentage of Completed Orders that were completed by the Contract Delivery Date during the relevant month in relation to each of: (a) Newly Provisioned Lines; (b) Transferred Lines; and (c) all Orders.</td>
</tr>
<tr>
<td>KPI(vi)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For the UK as a whole, and split by reference to each General Manager area.</td>
<td>Appointment availability</td>
<td>In relation to Appointed Orders that become Completed Orders during the relevant month, the average number of days (in working days) between the date on which the appointment was requested and the first available date offered by the Dominant Provider for the appointment.</td>
</tr>
<tr>
<td>KPI(vii)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For the UK as a whole, and split by reference to each General Manager area.</td>
<td>Average installation time (requiring an engineering visit)</td>
<td>The average number of days (in working days) from an Order becoming a Committed Order until that Order becomes a Completed Order during the relevant month, for Appointed Orders.</td>
</tr>
<tr>
<td>KPI(viii)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For the UK as a whole, and split by reference to each General Manager area.</td>
<td>Average installation time (not requiring an engineering visit)</td>
<td>The average number of days (in working days) from an Order becoming a Committed Order until that Order becomes a Completed Order during the relevant month, for those Orders that are not Appointed Orders.</td>
</tr>
<tr>
<td>KPI(x)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For the UK as a whole.</td>
<td>Average time to restore service</td>
<td>The average time (in working hours) during the relevant month for the Dominant provider to achieve Restored Service after a Fault has been registered in relation to each of: (a) Service Maintenance Level 1; and (b) Service Maintenance Level 2</td>
</tr>
<tr>
<td>KPI(xii)</td>
<td>For the UK as a whole, and split by reference to each General Manager area.</td>
<td>Percentage of faults restored on time for services subject to Service Maintenance Level 1</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>KPI(xi)</td>
<td>For the UK as a whole, and split by reference to each General Manager area.</td>
<td>Percentage of faults restored on time for services subject to Service Maintenance Level 2</td>
</tr>
<tr>
<td>Percentage of faults restored on time for services subject to Service Maintenance Level 2</td>
<td>For services subject to Service Maintenance Level 2, the percentage of Faults during the relevant month whereby the Dominant Provider achieved a Restored Service within the timescales for Service Maintenance Level 2.</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Table 11.12: KPIs for open publication (Part 3 – Late fault repair and provisions)

<table>
<thead>
<tr>
<th>KPI Direction</th>
<th>KPI requirement for WLR</th>
<th>KPI requirement for MPF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>KPI(i)</strong></td>
<td>Timing of fault repairs</td>
<td>Timing of fault repairs</td>
</tr>
<tr>
<td></td>
<td>For the UK as a whole.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The average daily number of Faults in the relevant month for which the Dominant Provider has not provided a Restored Service when the Relevant Commitment has been passed by:</td>
<td>The average daily number of Faults in the relevant month for which the Dominant Provider has not provided a Restored Service when the Relevant Commitment has been passed by:</td>
</tr>
<tr>
<td></td>
<td>(a) for services subject to Service Maintenance Level 1:</td>
<td>(for services subject to Service Maintenance Level 2):</td>
</tr>
<tr>
<td></td>
<td>(i) 1 calendar day or more;</td>
<td>(i) 1 calendar day or more;</td>
</tr>
<tr>
<td></td>
<td>(ii) 5 calendar days or more;</td>
<td>(ii) 5 calendar days or more;</td>
</tr>
<tr>
<td></td>
<td>(iii) 11 calendar days or more;</td>
<td>(iii) 11 calendar days or more;</td>
</tr>
<tr>
<td></td>
<td>and</td>
<td>and</td>
</tr>
<tr>
<td></td>
<td>(iv) 31 calendar days or more.</td>
<td>(iv) 31 calendar days or more.</td>
</tr>
<tr>
<td></td>
<td>(b) for services subject to Service Maintenance Level 2:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(i) 1 calendar day or more;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(ii) 5 calendar days or more;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(iii) 11 calendar days or more;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(iv) 31 calendar days or more.</td>
<td></td>
</tr>
<tr>
<td><strong>KPI(ii)</strong></td>
<td>Total fault repairs</td>
<td>Total fault repairs</td>
</tr>
<tr>
<td></td>
<td>For the UK as a whole.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The average daily number of Faults that have been validated and registered on the Equivalence Management Platform in the relevant month.</td>
<td>The average daily number of Faults that have been validated and registered on the Equivalence Management Platform in the relevant month.</td>
</tr>
<tr>
<td><strong>KPI(iii)</strong></td>
<td>Timing of first available appointment dates</td>
<td>Timing of first available appointment dates</td>
</tr>
<tr>
<td></td>
<td>For the UK as a whole.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The total number of appointments offered by the Dominant Provider in the relevant month in relation to the provision of network access to Wholesale Analogue Line Rental for which the first available date offered by the Dominant Provider for the appointment was:</td>
<td>The total number of appointments offered by the Dominant Provider in the relevant month in relation to the provision of network access to Metallic Path Facilities for which the first available date offered by the Dominant Provider for the appointment was:</td>
</tr>
<tr>
<td></td>
<td>(a) 13 Working Days or more;</td>
<td>(a) 13 Working Days or more;</td>
</tr>
<tr>
<td></td>
<td>(b) 17 Working Days or more; and</td>
<td>(b) 17 Working Days or more; and</td>
</tr>
<tr>
<td></td>
<td>(c) 22 Working Days or more, from the date on which the corresponding order was placed on the Equivalence Management Platform by a Third Party.</td>
<td>(c) 22 Working Days or more, from the date on which the corresponding order was placed on the Equivalence Management Platform by a Third Party.</td>
</tr>
</tbody>
</table>
### Summary of our decision

11.383 Table 11.13 below provides a summary of the KPIs that we require BT to provide by product.
<table>
<thead>
<tr>
<th>KPI</th>
<th>MPF</th>
<th>SMPF</th>
<th>WLR</th>
<th>VULA</th>
<th>ISDN2</th>
<th>ISDN30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of orders rejected</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Percentage of appointed orders provisioned on time</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Percentage of orders provisioned on time</td>
<td>✓ P</td>
<td>✓</td>
<td>✓ P</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Percentage of orders reported as faulty</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Percentage of installed base reported as faulty</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Appointment availability</td>
<td>✓ P GM</td>
<td>x</td>
<td>✓ P GM</td>
<td>x</td>
<td>GM</td>
<td>GM</td>
</tr>
<tr>
<td>Average installation time (requiring an engineering visit)</td>
<td>✓ P GM</td>
<td>x</td>
<td>✓ P GM</td>
<td>x</td>
<td>GM</td>
<td>x</td>
</tr>
<tr>
<td>Average installation time (not requiring an engineering visit)</td>
<td>✓ P GM</td>
<td>x</td>
<td>✓ P GM</td>
<td>GM</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Average installation time (all order types)</td>
<td>✓ GM</td>
<td>x</td>
<td>✓ GM</td>
<td>GM</td>
<td>✓ GM</td>
<td>✓ GM</td>
</tr>
<tr>
<td>*Average time to restore service</td>
<td>✓ P</td>
<td>✓</td>
<td>✓ P</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Percentage of faults restored on time for services subject to SL1</td>
<td>x</td>
<td>x</td>
<td>✓ P GM</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Percentage of faults restored on time for services subject to SL2</td>
<td>✓ P GM</td>
<td>GM</td>
<td>✓ P GM</td>
<td>GM</td>
<td>✓ GM</td>
<td>GM</td>
</tr>
<tr>
<td>Percentage of faults restored on time for services subject to SL3</td>
<td>✓ GM</td>
<td>GM</td>
<td>✓ GM</td>
<td>GM</td>
<td>✓ GM</td>
<td>GM</td>
</tr>
<tr>
<td>Timing of fault repairs</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Percentage of repeat faults</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Gateway availability (excluding Scheduled Outages)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Gateway availability (including Scheduled Outages)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Volume of orders submitted</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Volume of orders completed</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Volume of Installed Base</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Volume of faults reported</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Volume of installations affected by MBORC declarations</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Volume of repairs impacted by MBORC declarations</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Timing of fault repairs</td>
<td>✓ P</td>
<td>x</td>
<td>✓ P</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Total fault repairs</td>
<td>✓ P</td>
<td>x</td>
<td>✓ P</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Timing of first available appointment dates</td>
<td>✓ P</td>
<td>x</td>
<td>✓ P</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Total appointed orders</td>
<td>✓ P</td>
<td>x</td>
<td>✓ P</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Timing of appointed orders not provisioned on time</td>
<td>✓ P</td>
<td>x</td>
<td>✓ P</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Total appointed orders that did not become completed orders</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>
Notes to Table

✓ means that BT is required to provide this information to Ofcom and industry. The precise information that must be provided to industry may differ against that provided to Ofcom although, for reasons of clarity, we have not sought to represent these differences within this table. For further details on the level of information to be provided to Ofcom and industry, please see each of the directions set out in Part III to the notification in Annex 29.

P means that BT is required to publish this information on its website every three months, commencing 20 October 2014 (in addition to providing this information to industry and Ofcom).

× means that BT is not required to provide any information in relation to this KPI.

GM means that the data BT provided must be disaggregated between each GM region and Northern Ireland. In the case of VULA, this disaggregation requirement will not apply unless and until there are 100,000 or more lines using VULA services in that relevant GM region. Where the ‘GM’ marking is not used, BT is only required to publish KPIs in relation to the United Kingdom as a whole.

* For the average time to restore service KPI, BT is only required to publish information relating to Service Levels 1 and 2 (where relevant). However, BT is required to provide information on Service Level 3 to Ofcom (although this is not required to be published on BT’s website).

Timing of KPIs: Save for the requirement to publish information publicly on its website (which shall apply from October 2014 and require the publication of information every three months), BT is required to publish the KPIs above on a monthly basis from September 2014.

Legal Tests

11.384 For the reasons set out below, we are satisfied that the SMP condition requiring BT to publish all such information relating to quality of service as Ofcom directs in respect of each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the UK excluding the Hull Area meets the various tests set out in the Act.

11.385 Section 87(6)(b) of the CA03 authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information, for the purpose of securing transparency.

11.386 We have considered our duties under the CA03, including our general duties under section 3, and all the Community requirements set out in section 4, of the CA03. We note, in particular, that the SMP condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by ensuring that providers have visibility of the quality of service that BT provides to itself and to other providers.

11.387 Section 47 of the CA03 also requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. We consider that the SMP condition is:
• objectively justifiable, in that it aims to prevent undue discrimination in the provision of service by requiring BT to publish quality of service information about the service it provides to itself and to other providers;

• not unduly discriminatory, in that it is imposed only on BT and no other operator has provisionally been found to hold a position of SMP in these markets in the UK excluding the Hull Area;

• proportionate, in that it only requires BT to publish information as directed by Ofcom in the event we consider such information is required to monitor BT’s compliance with its other obligations, which is the minimum condition to ensure the desired objective; and

• transparent, in that it is clear in its intention that BT is required to publish quality of service information.

11.388 We further consider that the KPI Directions that we are making in each of the WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the UK excluding the Hull Area meet our duties under the CA03, including our general duties under section 3, and all the Community requirements set out in section 4, of the CA03 (for the reasons set out above) and also meet the requirements in section 49 of the CA03. We consider that the directions are:

• objectively justifiable, in that we have identified a need to publish specific KPIs to ensure that we can monitor any undue discrimination in the market;

• not unduly discriminatory, in that they only apply to BT and it is only BT that is subject to the SMP transparency condition;

• proportionate, in that BT is only required to publish specific KPI data related to key business processes and, as BT is already supplying such data, already has systems and procedures in place. Although we have decided to require regional (rather than national) reporting for some KPIs, we consider that this should not be unduly burdensome on BT and have chosen the use of BT’s 9 GM regions and Northern Ireland on the basis that BT already collects data for these particular areas. We consider that this requirement is proportionate in light of our aim of effectively monitoring compliance by BT with its non-discrimination obligation. Moreover, where we are imposing new KPIs we have provided BT with a two month implementation period; and

• transparent, in that it is clear from the directions as to what information would be required to be published and supplied by BT.

Consistency with the EC recommendations and the BEREC Common Position

11.389 In reaching the decisions set out above, we have also taken utmost account of the BEREC Common Position. In relation to the objective of achieving a reasonable
quality of access products (operational aspects)\textsuperscript{822}, the BEREC Common Position identifies, among other things, as best practice that:

"\textbf{BP34} NRAs should impose a generic requirement on SMP operators to provide KPIs as a means to monitor compliance with a non-discrimination obligation and ensure that SMP operators fulfil their SLAs (unless there is evidence that this is unnecessary or would not be cost effective).

\textbf{BP34a} KPIs should cover all necessary specific service areas. Service areas where KPIs are most likely to be necessary are ordering, delivery, service (availability) and maintenance (repair).

\textbf{BP34b} The results of monitoring KPIs should be made available to all operators in the market. To determine whether they could have been discriminated against, alternative operators would need to be able to compare the levels of service they have received to those provided by the SMP player a) to their downstream businesses and b) the industry average.

\textbf{BP34c} NRAs should take oversight for the process of setting KPIs. NRAs should determine the level of their involvement in this process by taking into account specific market circumstances and particular concerns for discriminatory behaviour".

11.390 We consider that the decisions set out above are consistent with the best practice set out in the BEREC Common Position.

11.391 We have also taken utmost account of the Costing and Non-discrimination Recommendation. The Costing and Non-discrimination Recommendation states that when imposing a non-discrimination obligation under Article 10 of the Access Directive, NRAs should impose on the SMP operator the use of KPIs in order to monitor effectively compliance with non-discrimination obligations. It indicates that such KPIs should:

- measure performance at least in relation to the following key elements of the provision of regulated wholesale services: (a) ordering process; (b) provision of service; (c) quality of service, including faults; (d) fault repair times; and (e) migration between different regulated wholesale inputs (excluding on-off bulk migrations); and

- allow for comparison of services provided internally and externally by the SMP provider.

11.392 Moreover, the Costing and Non-discrimination Recommendation provides that NRAs should:

\begin{quote}
\textsuperscript{822} In this respect, the BEREC Common Position identifies the following competition issue: SMP operators may have an incentive to discriminate in favour of their own downstream operations in relation to the quality of wholesale access products. As a result, access products may not be of reasonable quality and service levels may not be comparable with those provided by the SMP operators to their own downstream businesses.
\end{quote}
• take account of existing performance measures in imposing KPIs;

• ensure that KPIs are published in a manner that allows for early discovery of potential discriminatory behaviour (the Costing and Non-discrimination Recommendation recommends at least quarterly publication on the NRA’s website or on the website of an independent third party designated by the NRA);

• ensure that the KPIs are regularly audited by the NRA or, alternatively, by an independent auditor; and

• where the results of the KPIs indicate that the SMP operator may not comply with its non-discrimination obligation, intervene by investigating the matter in more detail and where necessary enforce compliance.

11.393 We consider that our conditions are consistent with these principles. The KPIs will either be openly published or available to industry for review. They cover all the key elements of service provision and allow for comparison between internal and external customers. They take account of existing performance measures and we have indicated a willingness to intervene if necessary if KPIs indicate a problem. As BT has been providing KPIs to us for a number of years, and we do not have reason to suspect that such data is incorrect or inaccurate, we have not required such KPIs to be regularly audited. We think that such a requirement would be disproportionate. However, if concerns are raised in the future, we will reconsider whether this information should be audited as part of the next market review.

SLA/SLG Negotiations

11.394 In this sub-section we set out our considerations of the issues related to future negotiations between Openreach and its customers in relation SLA/SLAs.

Proposals in the July 2013 FAMR Consultation

11.395 In the July 2013 FAMR Consultation\textsuperscript{823} we noted that CPs had expressed concern about the process for industry negotiations when Openreach or CPs consider that existing terms should be changed or that Openreach should provide new SLAs/SLGs for an element of a service. CPs had also stated their concern that SLAs/SLGs are short on detail, liable to change at short notice, not adequate in terms of performance or compensation and that they are not sufficiently comprehensive. We recognised that Openreach, as the SMP provider for services in fixed access markets, naturally holds a more powerful negotiating position than other CPs. We also stated our concern that recent negotiations concerning SLA/SLGs for appointed provisioning had been unduly extended, led to potentially unsatisfactory outcomes and involved only a minority of stakeholders, even though the outcome could affect the whole industry.

11.396 We stated our view that, where all parties are negotiating from a broadly similar position of market power, commercial negotiation without the involvement of the industry regulator is the preferred method for reaching agreement on the terms of

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\textsuperscript{823} Paragraph 10.165, Ofcom, \textit{Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - Consultation on the proposed markets, market power determinations and remedies}, 3 July 2013, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/summary/fixed-access-markets.pdf}.
SLAs and SLGs. In recognition of the concerns and problems highlighted above, we explained our view that it is unsatisfactory that the process that determines critical aspects of SLA/SLG terms is not more predictable. We also stated that negotiations are not sufficiently visible to the wide variety of stakeholders that they affect.

11.397 Whilst we set out our view that regulatory intervention should be the last resort, we proposed that there should be a defined, structured and open process for the negotiation of SLA/SLG terms. We proposed a set of principles for the process (set out in Table 11.14, below), which reserved a central role for the OTA2 and set a time limit for negotiations.

Table 11.14: Proposed principles for the contract negotiation process (from the July 2013 FAMR Consultation)

<table>
<thead>
<tr>
<th>Principles</th>
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<tbody>
<tr>
<td>Principle 1</td>
</tr>
<tr>
<td>OTA2 should facilitate all negotiations to create or change an SLA/SLG and this negotiation should allow input from all affected parties.</td>
</tr>
<tr>
<td>Principle 2</td>
</tr>
<tr>
<td>OTA2 carries out an initial assessment of whether a request for a new SLA/SLG or change to an existing SLA/SLG is broadly appropriate, reasonable in scope, and clear in the problem it is trying to address and agrees with Ofcom that the request should be investigated further.</td>
</tr>
<tr>
<td>Principle 3</td>
</tr>
<tr>
<td>No negotiations over the content of an SLA/SLG should extend beyond 6 months. If at the end of that period negotiations have not been successfully concluded, Ofcom would invite OTA2 to report to us as to whether we should initiate a review.</td>
</tr>
<tr>
<td>Principle 4</td>
</tr>
<tr>
<td>Provision should continue according to the terms of an appropriate, pre-existing SLA/SLG until such time as a new SLA/SLG can be agreed or in the case of a new SLA or SLG proposal the status quo will apply.</td>
</tr>
</tbody>
</table>

11.398 We explained that, although these principles would not amount to formal regulatory obligations on any party, they would outline the principles which we would expect to be followed. We stated that, in the event of the failure of any future negotiations over the terms of SLAs/SLGs, adherence to these proposed principles was likely to be one of the factors we would consider when adjudicating on any disputes between stakeholders (which are raised with us) or in considering any further regulatory measures on this subject.

Stakeholder responses to the July 2013 FAMR Consultation and December 2013 LLU WLR Consultation

11.399 Ten stakeholders responded to the framework that we proposed in the July 2013 FAMR Consultation. The majority (including Openreach[^824], BT Group[^825], EE[^826], KCOM[^828], Sky[^829], TalkTalk[^830], Verizon[^831] and Virgin[^832]) expressed support for

aspects of the proposals, though some stakeholders offered comments on the proposed principles and/or felt that we should add further principles or offer further guidance about the SLA/SLG negotiation process.

Principles 1 and 2 - The role of the OTA2 and practical application

11.400 BT Retail stated that it was not convinced of the value of the OTA2’s role in negotiations. It considered that industry should negotiate SLAs and SLGs directly with suppliers without the OTA2’s involvement. It stated that the OTA2 may be “able to act as a facilitator and/or mediator in the negotiation process but it must be clear that they do not have any actual or quasi-decision making role”.

11.401 Openreach stated that the practical application of principle 2 would need to be monitored, for example “in how the OTA2 carries out its initial assessments of whether requests for new or amended SLA/SLGs are broadly appropriate” and the “status of any apparent decisions or recommendations that come out of this process”. Openreach stated it would be concerned if OTA2 outputs were simply adopted without due and proper consideration by Ofcom.

11.402 KCOM considered that principle 2 suggested that there would be a standard which requests for new SLAs/SLGs would need to meet in order to be considered. It questioned the basis on which Ofcom would agree to a request being investigated further (which, KCOM suggested, risked prejudging whether such requests were fair and reasonable).

11.403 argued that Ofcom should act as a “backstop” in negotiations, to encourage Openreach to engage with negotiations appropriately.

Principle 3 - Time limits for negotiation and clarifying/amending the subsequent process

11.404 TalkTalk suggested that the time limit for the negotiation period should be four months instead of six months. Vodafone stated that “2 months is sufficient time
to enable agreement on matters of principle. After this point, if no industry consensus is forthcoming Ofcom needs to step in and dictate terms". Sky stated that in cases where negotiations were clearly going to fail, the OTA2 need not wait six months before making a referral to Ofcom.840

11.405 Similarly, EE suggested reducing the negotiation period to two months and adding interim milestones (e.g. for written responses) within this period. Moreover, it suggested revised timeframes for the entire process – a maximum timeframe of two weeks for the OTA2 review following receipt of the SLA/SLG proposal and a similar timeframe for the OTA2 to report on deadlock issues; and a maximum timeframe of four months within which Ofcom should conclude any review/investigation/dispute.841

11.406 [840] suggested an amendment to principle 3. It considered that it was more appropriate for the OTA2 to refer negotiations that were not successfully concluded to Ofcom for consideration after six months, after which the "subsequent move should be an invitation by Ofcom to the affected parties to bring a dispute under Section 185A of the Act".842

11.407 In addition, Sky considered that, after the six month period, the OTA2 should not simply be invited to report but should be required to do so under the expectation that Ofcom would conduct its own investigation. Sky also considered that Ofcom should state its objectives explicitly in investigating an unsuccessfully negotiated SLA/SLG, to take account of: (i) the outcomes of the OTA2-facilitated work; (ii) the contribution of all participants; and (iii) the contribution of participants to delays in negotiations.843

11.408 TalkTalk considered that, in cases where agreement was not reached, Ofcom should conduct an investigation unless certain pre-defined criteria are met.844

Principle 4 - clarifying the date when new SLAs/SLGs take effect

11.409 Sky considered that Ofcom should amend principle 4 so that the OTA2 process should be expected to determine the time when a new SLA/SLG took effect. It argued that SLAs should apply from either: (i) the date when their negotiation was successfully concluded; (ii) another date agreed during the negotiations, or; (iii) the date on which unsuccessful industry negotiations were referred to Ofcom for investigation or via a dispute. In any case, Sky argued, the SLA and SLG obligations

842 [840]
should be presumed to be in force before being enshrined in any contract between BT and CPs.\textsuperscript{845}

11.410 TalkTalk argued that the new SLA/SLG terms should be backdated to the date on which a new SLA/SLG was requested, unless agreed otherwise.\textsuperscript{846}

Other comments

11.411 Sky considered that the OTA2’s work should be fully transparent, ensuring industry engagement by sharing requests for information with all parties, clarifying when it issued such requests and when it required information to be provided.\textsuperscript{847}

11.412 Both Sky\textsuperscript{848} and TalkTalk\textsuperscript{849} suggested that a senior Ofcom staff member should attend the OTA2 facilitated discussions as an observer.

11.413 Sky\textsuperscript{850}, KCOM\textsuperscript{851} and TalkTalk\textsuperscript{852} further commented, in response to the December 2013 LLU WLR Consultation, that the outcomes of SLA negotiations reflected BT’s market power. Sky considered that Ofcom should conduct analysis to determine and implement the appropriate level at which SLAs and SLGs should be set.\textsuperscript{853}

Our analysis and conclusions

11.414 We welcome stakeholders’ broad support for the principles affecting the OTA2-facilitated negotiations process. We have sought to address a number of those comments in the wording of the principles. The amended principles for the process are set out in the Table 11.15.

\textsuperscript{845} Paragraph 4.5, Sky response to the July 2013 FAMR Consultation - quality of service.

\textsuperscript{846} Paragraph 4.11, TalkTalk response to the July 2013 FAMR Consultation - quality of service.

\textsuperscript{847} Paragraph 4.6, Sky response to the July 2013 FAMR Consultation - quality of service.

\textsuperscript{848} Ibid.

\textsuperscript{849} Paragraph 4.14, TalkTalk response to the July 2013 FAMR Consultation - quality of service.

\textsuperscript{850} Paragraph 2.10, Sky, Response to the December 2013 LLU WLR Consultation – quality of service,

\textsuperscript{851} P.1, KCOM, Response to the December 2013 LLU WLR Consultation,

\textsuperscript{852} Paragraph 10.3, TalkTalk response to the December 2013 LLU WLR Consultation,

\textsuperscript{853} Paragraph 2.13, Sky response to the December 2013 LLU WLR Consultation,
Table 11.15: Amended principles for the contract negotiation process

<table>
<thead>
<tr>
<th>Principles</th>
<th>Detail</th>
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<tbody>
<tr>
<td>Principle 1</td>
<td>The OTA2 should facilitate all negotiations to create or change an SLA/SLG and that this negotiation will allow input from all affected parties.</td>
</tr>
<tr>
<td>Principle 2</td>
<td>The OTA2 will, using stated criteria, assess whether a request for negotiations on a new SLA/SLG or change to an existing SLA/SLG (and related contract terms) should be facilitated through this negotiation process.</td>
</tr>
<tr>
<td>Principle 3</td>
<td>No negotiations over the content of an SLA/SLG should extend beyond 6 months, with regular reporting to Ofcom. If, in the opinion of the OTA2, negotiations cannot be successfully concluded or have not been concluded within 6 months, then the OTA2, as part of its final report to Ofcom, will set out its view on whether and on what basis Ofcom should initiate a review.</td>
</tr>
<tr>
<td>Principle 4</td>
<td>Provision should continue according to the terms of an appropriate, pre-existing SLA/SLG until such time as a new SLA/SLG can be agreed.</td>
</tr>
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</table>

Principles 1 and 2 - The role of the OTA2 and practical application

11.415 We note that some stakeholders have concerns or sought further clarification as to the OTA2’s (and Ofcom’s role) in the initial part of the contract negotiation process.

11.416 We envisage that the OTA2’s role will continue to be to facilitate the negotiation process, rather than decision making. Nonetheless, there is significant scope for the OTA2 to contribute to, as well as to guide and structure, the negotiation process and to assist in ensuring that parties are able to participate fully.

11.417 We would expect that the OTA2 would also have a key role in prioritising the issues to be considered in the process. This could mean that the OTA2 would decide that an issue is not appropriate for consideration in the process. This would not, of course, stop a stakeholder from raising this issue as a dispute directly with Ofcom, but would ensure that what would be a resource-intensive process is used effectively.

11.418 We have discussed with the OTA2 an initial set of criteria for making its assessment of SLA/SLG requests (under principle 2). While these criteria may need to be adapted over time, we consider that they form a reasonable basis for decisions as to prioritising issues for review. We have set these criteria out in Table 11.16 below.

Table 11.16: Criteria for the assessment of SLA/SLG requests

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<th>Detail</th>
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<td>Criterion 1</td>
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<td>Criterion 2</td>
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<td>Criterion 3</td>
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<tr>
<td>Criterion 4</td>
</tr>
</tbody>
</table>
11.419 These criteria are referenced in our principles. We also consider that it would not be appropriate for Ofcom to 'gate' these assessments (i.e. for the principles to require the OTA2 to seek Ofcom’s agreement as to whether to take an issue forward) and we have amended the wording of principle 2 of the principles for the contract negotiation process to clarify our position.

Principle 3 - Time limits for negotiation and clarifying/amending the subsequent process

11.420 We consider that six months is an appropriate period in which to allow negotiations to take their course, where it is clear they are progressing. However, we agree that where negotiations have clearly broken down then the OTA2 need not wait for the full six month period to elapse before providing its report to Ofcom. We have amended the principles for the contract negotiation process to allow for this. We also note that the OTA2 plans to write to us monthly with general updates on negotiations (copying in all CPs that wish to be party to the negotiations).

11.421 With regard to EE’s suggestion of interim milestones for the OTA2 negotiation process, the OTA2 currently intends to set out the proposed timetable for its work on particular requests to relevant parties after receipt of a request for a new SLA/SLG or changes to an existing SLA/SLG.

11.422 We have amended the wording of principle 3 so it is clear that: (i) the OTA2 will be actively reporting to Ofcom on the progress of the negotiations, including setting out its view on whether and on what basis Ofcom should initiate a review; and (ii) after receiving this report, we will consider the matter on its merits. We cannot commit (in the principles) to a full investigation or to invite parties to raise disputes without considering the facts of each specific case first. While we will need to take an independent view of the issues, we will take appropriate account of the OTA2’s report, which we expect will include details about the contribution of all participants, including their role in any delays to negotiations.

Principle 4 - clarifying the date when new SLAs/SLGs take effect

11.423 We consider that the requested ‘backdating’ of SLAs/SLGs may risk distorting the negotiation process. It could lead to a disproportionate focus on performance in that period and may act to discourage Openreach from engaging positively with the proposed changes, as Openreach would not have an opportunity to modify its behaviour in response to the new targets and penalty payments. We also consider that our principle that “provision should continue according to the terms of an appropriate, pre-existing SLA/SLG until such time as a new SLA/SLG can be agreed” provides sufficient clarity as to the time at which the new SLA/SLG would take effect, i.e. on its agreement.

Other comments

11.424 We understand that the OTA2 will aim to ensure that the negotiation process is transparent and that stakeholders are fully engaged. The question of transparency in relation to requests for information is discussed further below.

11.425 We do not consider it is necessary for Ofcom to attend negotiated discussions, especially as we will be kept abreast of developments by the OTA2 through its regular reports and its practice of copying us into key correspondence.
11.426 We have also noted that some CPs’ responses suggested that they are concerned about Openreach’s willingness to engage in this negotiation process.

11.427 BT is required to provide network access on fair and reasonable terms and conditions (and in some cases charges). What is fair and reasonable will depend on the circumstances prevailing at the time. Where Openreach’s customers ask it to reconsider certain aspects of its Reference Offer in light of this regulatory obligation, we would expect Openreach to engage with its customers including, where appropriate, through negotiations facilitated by the OTA2.

11.428 We would expect all parties to such negotiations (including Openreach) to make all reasonable efforts to exhibit the following behaviours:

- to approach negotiation of these matters with professional courtesy and an openness and willingness to consider the issues raised and any evidence presented;
- to be responsive to requests for negotiation and dialogue in a timely manner;
- to ensure that suitably empowered staff are available for meetings within a reasonable period following a request; and
- to ensure that requests for information are responded to as quickly as reasonably possible.

11.429 Furthermore, if Openreach does not engage in a manner we consider to be appropriate, then we will consider whether there is a need for additional regulatory conditions (to be imposed either as part of future market reviews or at another time) which impose a process for negotiation in such circumstances.

11.430 If an issue is referred to us, we will need to consider what is appropriate, including whether an issue/range of issues warrants our intervention. In addition to considering such issues under our dispute resolution powers, it may also be necessary to consider whether a broader intervention might be required through, for instance, an own initiative compliance investigation or a policy review. Any decision about intervention will be based on our assessment of the issues referred to us in light of our duties and the broader regulatory framework. In the context of any such considerations, we would also consider any advice that the OTA2 offers in its final report, as appropriate.

11.431 Where an issue is referred to us and we consider that it is appropriate to intervene, our starting point will be the respective proposals of each of the parties. In the first instance, we would expect to consider whether it would be appropriate, in light of our duties and the broader regulatory framework, to choose between these proposals, rather than seek to consider other alternative options in detail. This is intended to create the incentive for parties to set out their most reasonable final positions, rather than taking an extreme position in order to try to distort any eventual regulatory outcome in their favour. However, this approach remains subject to the overall requirement to adopt an outcome which overall best meets our statutory duties.
Section 12

Remedies: WLA next generation access

Summary

12.1 In this section, we set out our conclusions regarding the regulation of VULA, SLU and PIA. In summary, our conclusions are:

- Virtual Unbundled Local Access:
  - BT is required to continue to provide VULA on fair and reasonable terms, conditions and charges and on the basis of EOI and no undue discrimination;
  - subject to the above, BT retains pricing flexibility over the level of VULA charges;
  - we have set a charge control of £11 for a migration of a VULA customer from one CP to another; and
  - we have required BT to reduce the minimum contract period following a VULA migration to one month;

- Sub-Loop Unbundling:
  - BT is required to continue to provide SLU on fair and reasonable terms and conditions and no undue discrimination, subject to a Basis of charges condition. We also set out in this section our position on the issue of SLU and vectoring; and

- Physical Infrastructure Access:
  - BT is required to continue to provide PIA on fair and reasonable terms and conditions and no undue discrimination, subject to a Basis of charges condition and limited to access network deployments.

Introduction

12.2 We concluded in Section 7 that BT has SMP in the market for WLA and accordingly in Section 13 that BT should therefore be required to offer LLU as a specific access remedy relevant to CGA. This section sets out our decision to require BT to offer specific access remedies in relation to NGA. The section does not include our regulation of the VULA margin, our proposals for which will be set out in the forthcoming consultation on our approach to the VULA Margin.

12.3 Note that as discussed in Section 10 we consider that imposing specific network access remedies on KCOM in the same form as BT, in the absence of clear evidence

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854 Note that the requirement for fair and reasonable charges is removed for the GEA migration charges as explained in paragraph 12.197.
of demand for the equivalent access products to those currently supplied by BT, to be disproportionate and inappropriate at this time. We consider that opportunities for competition are best met by continuing to rely instead on the general network access obligations we set out in Section 10.

12.4 This section starts by introducing the issue of supporting investment and competition in NGA and then sets out our decision to impose on BT three specific access remedies with respect to NGA:

- **Virtual Unbundled Local Access**: VULA provides access to BT’s NGA network in a way that is similar to how LLU provides access on the CGA network. However, rather than providing a physical line, VULA provides a virtual connection that gives CPs a direct link to their customers and provides flexibility over how this link is integrated into their network and over product offerings;

- **Sub Loop Unbundling**: this allows CPs to physically take over (or share) the part of BT’s existing copper lines between a street cabinet and the customer premises, enabling them to deploy FTTC networks; and

- **Physical Infrastructure Access**: this remedy allows CPs to deploy fibre in the access network using BT’s ducts and poles, to support deployment of technologies such as FTTP or FTTC (i.e. using PIA to deploy a ‘backhaul’ link from a CP’s network to the street cabinets).

12.5 Overall we consider that national and EU competition law remedies are insufficient to address the competition problems we have identified. We refer in this section to specific reasons why and we again rely on the reasons set out in our broader conclusion as to the sufficiency of these competition law remedies (see Section 8). We therefore believe that it is appropriate to impose the specific *ex ante* regulatory obligations on BT in the WLA market in order to address the competition concerns which we have identified and assessed. This section also sets out why we are not introducing any new or alternative specific access remedies to those described above.

**Supporting investment and competition in NGA**

**Key developments since the 2010 WLA Review**

12.6 The 2010 WLA Review introduced two new NGA remedies, VULA and PIA, and retained the SLU remedy. We set out in that review that we expected VULA to be the main basis of competition in areas where BT had deployed its NGA network. We expected that PIA and SLU were more likely to be used to deploy NGA in advance of BT’s NGA deployment or where BT did not deploy NGA. In relation to the latter, we noted that CPs in receipt of State aid may deploy NGA services using PIA or SLU in areas where it was not otherwise economic to do so.

12.7 Since the conclusion of that review in October 2010, there has been a large increase in the availability and take-up of superfast broadband. Virgin has provided a series of
speed upgrades for existing customers\textsuperscript{855} and its entry level product for new customers is now well above minimum superfast speeds. Currently, Virgin reports 3.4 million superfast broadband customers out of a total of 12.6 million premises covered.\textsuperscript{856} BT has rapidly deployed its NGA network, reporting coverage of more than 19 million premises with over 2.7 million customers connected (more than 2.1 million of these are customers of BT’s retail divisions).\textsuperscript{857} This means that around 27% of all broadband lines on the major networks of BT and Virgin are currently superfast.\textsuperscript{858}

12.8 Of the three NGA remedies imposed in the 2010 WLA review, it is VULA that has seen by far the most use. This is because every customer connected to BT’s NGA network ultimately consumes VULA whether as one of the 2.1 million customers of BT’s retail divisions or one of the 0.6 million customers of other CPs such as Sky, TalkTalk or EE.

12.9 Despite some initial interest by CPs and participation in trials, PIA has so far seen very low levels of take-up. We note that a key use of PIA that we had envisaged – in areas subject to state funding – has not occurred, in part because no non-BT CP has won any of the main BDUK programme contracts.\textsuperscript{859} Use of SLU is also low, noting that the largest deployment by far – by Digital Regions Limited (‘DRL’) in South Yorkshire – is being closed.\textsuperscript{860} As a result, the absolute number of customers using superfast services on networks based on either PIA or SLU is very low.

12.10 Another aspect we have observed over the period in relation to NGA investment is a much greater than expected proportion of FTTC over FTTP. At the time of the 2010 WLA Statement, we reported that BT was planning to deploy 75% FTTC and 25% FTTP. However, the actual proportion of FTTP deployed has been much lower, with BT stating that it expected FTTP volumes to remain very low\textsuperscript{861} (noting the availability of FTTP on Demand\textsuperscript{862}). We also note that some smaller CPs, such as CityFibre, Gigaclear and Hyperoptic, are offering FTTP (or fibre to the building) services, with some plans to expand.


\textsuperscript{856} Virgin Media, \textit{Q1 2014 Selected Operating and Financial Results}, 7 May 2014, http://phx.corporate-ir.net/ExternalFile?item=UGFyZW50SU9QMJMyOTg3fENoaWxkSUQ9LTBFVHlwZTZ0t1.


\textsuperscript{858} Based on a total of 22.9 million (rounded), comprising BT’s “Total DSL and fibre” of 18.4 million and Virgin’s total cable broadband of 4.4 million taken from the respective companies’ quarterly results ending 31 March 2014, as referenced above.

\textsuperscript{859} Broadband Development UK, which provides State aid funding in conjunction with local authorities for areas without a reasonable broadband service.


\textsuperscript{861} P.38, \textit{BT Response to the 2013 FAMR Consultation}, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf

\textsuperscript{862} FTTP on Demand allows a customer served by an FTTC-enabled cabinet to pay for fibre to be deployed all the way to their premise.
Superfast broadband over the forthcoming market review period on BT’s and Virgin’s networks

12.11 Over the market review period, we expect both NGA coverage and number of superfast subscribers to grow. In addition to Virgin’s network, which covered 12.6 million premises as of 31 March 2014, we note that BT is nearing the end of its main commercial build (having achieved 66% fibre coverage or around 19 million premises) and that all its BDUK contracts are now in the build phase. By the end of the market review period in 2017, we expect that, through State aid funding, superfast broadband will reach at least 95% of premises.

12.12 We expect the number of superfast subscribers to grow significantly over the period, due to a number of factors:

- Virgin continuing to upgrade existing non-superfast customers to superfast speeds;
- BT’s network expansion as outlined above, which increases the addressable market of premises that can subscribe to superfast services; and
- growing consumer demand for superfast speeds as a result of a general increase in data usage (even without the introduction of a specific application that could significantly accelerate demand – i.e. a ‘killer app’).

12.13 We note that, over the past two years, Virgin and BT combined have reported at least half a million net superfast adds per quarter (as set out in the table below) on their respective networks. While we expect Virgin’s net adds to reduce given it has already converted over three quarters of its customers to superfast, this is being offset by an increase in BT’s net adds due to its increasing network footprint and demand for superfast speeds.

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863 Virgin, Q1 2014 Selected Operating and Financial Results, 7 May 2014, http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9MjMyOTg3fENoaWxkSUQ9LTF8VHlwZT0z&t=1.
866 For example, we note Virgin’s announcement that it will increase existing customers’ speeds by at least 20Mbit/s (see footnote 855).
Table 12.1: BT and Virgin net superfast broadband subscribers

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<td>3.2</td>
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</tr>
<tr>
<td>Net adds</td>
<td>0.18</td>
<td>0.13</td>
<td>0.15</td>
<td>0.46</td>
<td>0.45</td>
<td>0.42</td>
<td>0.34</td>
<td>0.25</td>
<td>0.25</td>
<td>0.21</td>
<td>0.19</td>
</tr>
<tr>
<td>Total</td>
<td>2.05</td>
<td>2.75</td>
<td>3.43</td>
<td>4.00</td>
<td>4.5</td>
<td>5.0</td>
<td>5.6</td>
<td>6.1</td>
<td></td>
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<td></td>
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<tr>
<td>Net adds</td>
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<td>0.52</td>
<td>0.57</td>
<td>0.55</td>
<td>0.53</td>
<td></td>
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</tr>
</tbody>
</table>

Source: Company quarterly reports. Notes: Calendar quarters; BT only reported Openreach totals and net adds from Q2 2012; and some reported figures have been rounded, hence net adds may not equal total superfast subscribers.

12.14 Looking ahead, we have considered a range of estimates for the total number of superfast broadband subscribers in 2017, in order to gauge the importance of superfast broadband over the review period. We sought CPs’ own estimates using our s.135 powers.

- BT provided a forecast that Openreach’s total superfast subscribers for its financial year 2016/17 would be [867].

- Sky forecast that by June 2017 there would be [868] superfast broadband subscribers in the UK, comprising [868] on the BT network and [868] on the Virgin network868;

- TalkTalk provided a forecast of [869] FTTC customers in June 2017869; and

- Virgin forecast [870] superfast customers on its network in December 2016870; and

- EE forecast [871] superfast customers on the BT network in December 2016.871

12.15 We note only Sky’s forecasts covered both BT’s and Virgin’s network. We have therefore added Virgin’s forecast to the forecasts of BT, TalkTalk and EE and BT’s forecast to Virgin’s.872 This provides us with the following total superfast broadband estimates: BT: [873] Sky: [873] TalkTalk: [873] Virgin: [873] EE: [873]. We also note estimates produced from analysts such as Analysys Mason which forecast take-up of 15 million in 2017.873 These estimates indicate that the provision of superfast broadband will be an important component over the market review period, with even

867 BT response to question 1.1 of the s.135 notice of 12 February 2014.
868 Sky response to question 1 of the s.135 notice of 21 February 2014.
869 TalkTalk response to question 1.1 of the s.135 notice of 12 February 2014. TalkTalk’s March 2017 figure has been used here to provide a closer comparison to the other CPs forecasts, however it provided forecasts out to December 2017 (of [873]).
870 Virgin response to question 1.1 of the s.135 notice of 12 February 2014.
871 EE response to question 1.1 of the s.135 notice of 12 February 2014.
872 We add BT’s forecast to Virgin’s rather than another CP’s as it reflects the forecast of the network owner (i.e. Openreach) which may be in a better position to forecast total demand for its own network. We note that doing so means [873]. We also note the figures come from forecasts which range over a six month period between December 2016 and June 2017 so are not exactly comparable.
the lower estimates indicating that a significant number of connections will be superfast.

12.16 The above observations around coverage and take-up are focused on consumption of services offered by the main two networks – BT and Virgin – which use two main technologies of FTTC and cable respectively.

Other NGA networks using PIA and SLU and future developments

12.17 In terms of the potential for other CPs to deploy NGA, we note that there are three main ways of deploying NGA – by unbundling BT’s network at the cabinet using SLU, by deploying a network using BT’s ducts and poles made available via PIA, or by building a network independently of BT’s access network (as smaller CPs such as Hyperoptic, CityFibre, IFNL and Gigaclear have done). While we note Hyperoptic’s announcement last year of investment in support of its plans to deploy to up to 500,000 homes and the recent announcement of a joint venture between CityFibre, Sky and TalkTalk to deploy FTTP in York, we have not received firm evidence of plans to use SLU and PIA to deploy NGA on a material scale over the market review period (i.e. beyond trials).

12.18 We note that there are likely to be technological developments on BT’s and Virgin’s networks that may be employed over the market review period to improve speeds (including in some cases maintaining speeds as demand grows). On Virgin’s cable network this includes ongoing upgrades of the DOCSIS standard, noting that since we published the 2013 FAMR Consultation, it announced a new 152Mbit/s offer. We also note BT has engaged or will engage in trials of vectoring of FTTC (which reduces cross-talk interference), other improvements to FTTC and fibre to the distribution point (FTTDP, also known as G.fast, which brings fibre closer to the premise than FTTC). Greater penetration of FTTP generally would also increase speeds, while BT’s FTTP on Demand product could facilitate the provision of FTTP on a demand-led and premises-by-premises basis.

Requirement for a specific set of NGA remedies

12.19 As our assessment of the WLA market shows, the level of investment required by a third party to replicate BT’s NGA network on a sufficiently large scale to compete at this level is a significant barrier to entry. In the absence of requiring access to BT’s infrastructure for the purposes of providing retail NGA services, we consider that BT would have an incentive and ability to refuse access at the wholesale level thereby favouring its own retail operations with the effect of hindering sustainable competition.

876 Data Over Cable Service Interface Specification.
877 See footnote 855.
in the corresponding downstream markets, ultimately against the interests of end-users. Based on this and the importance of NGA services over the period of this review, we consider that it is appropriate, in addition to the general remedies, to place on BT a set of specific NGA remedies for the market review period.

12.20 These provide a series of ways in which CPs can provide NGA services in competition with BT – through VULA, which enables them to gain access to BT’s NGA network, and through SLU and PIA, which could enable them to deploy their own FTTC and/or FTTP network in order to offer NGA services to their customers. We consider each of these in turn and then, after outlining our decision in Section 13 to continue to require BT to provide LLU, consider in the following sub-section the four specific WLA access remedies in combination in terms of promoting competition and investment.

Virtual Unbundled Local Access

Introduction and position in the 2010 WLA Statement

12.21 We introduced VULA in the 2010 WLA Review as the remedy by which BT would provide access to its NGA network (FTTC and FTTP). We set out that the underlying objective was to support competition and investment in the supply of NGA-based products in downstream markets. The intention was that it would, as far as possible, replicate many of the features of a physical access remedy such as LLU.

12.22 We considered that as the case for CPs to deploy duplicate NGA networks in parallel with BT was challenging, the absence of a remedy such as VULA would mean CPs would be without a viable WLA remedy which they could use to compete with BT in downstream markets. We considered that such an outcome could limit competition in the supply of broadband services, particularly at the retail level, to the detriment of consumers.

12.23 We set out our view that the most effective way to support the development of downstream competition would be to provide significant scope for alternative providers to innovate and differentiate in how they package and deliver services, and considered that VULA would provide such scope. We considered that the benefits of VULA would be greater if it was provided as a ‘raw’ product which provided CPs with significant flexibility over their own networks and the services that they could deliver to end-users, as is the case with LLU. As a technology neutral remedy, we considered VULA would be relevant to both FTTC and FTTP deployments.

12.24 In the 2010 WLA Statement we described five high-level characteristics that we considered VULA would need to have in order to meet the above objectives and be consistent with the WLA market definition. These were:

- local access: we stated that interconnection by the access seeker should occur locally, i.e. at the first feasible aggregation point. In practice we considered this was likely to be in the local serving exchange where the first Ethernet switch was located (‘NGA exchange’)\(^{879}\).

\(^{879}\) Note that the local serving exchanges for NGA (FTTC and FTTP) are not necessarily the same local serving exchanges as for CGA as fibre does not have the same distance limitations as copper and therefore a higher level of aggregation is possible.
• **service agnostic access**: we said that VULA, like LLU, should be a generic access product. That is, it should provide service agnostic connectivity, replicating one of the key features of LLU. This meant the product should not be confined to supporting particular downstream services;

• **uncontended access**: we stated that the connection, or capacity, between the consumers’ premises and the local serving exchange where interconnection takes place should be dedicated to the end-user, i.e. the connection should be uncontended\(^{880}\);

• **control of access**: we stated that CPs should be given flexibility to allow them to offer differentiated products to consumers. We said this freedom of control, in order to provide different types of services, could potentially involve varying quality of service parameters; and

• **control of customer premises equipment (‘CPE’)**: we noted that similar to the control of access characteristic described above, allowing competing CPs the ability to control customer premises equipment was crucial in ensuring that the potential benefits of VULA were realised.

### Developments since the 2010 WLA Review

12.25 As discussed in paragraph 12.13, the number of VULA connections has risen significantly since VULA was introduced, with BT reporting more than 2.7 million VULA connections as of 31 March 2014 and 347,000 added in Q1 2014.\(^{881}\) BT said in its response to the July 2013 FAMR Consultation that monthly orders were then significantly in excess of 100,000 and that it expected further growth as CPs moved to ‘wires-only’.\(^{882}\)

12.26 According to BT, around 2.1 million of these connections were supplied to BT’s retail divisions, although take-up by other CPs has been increasing with 98,000 non-BT net adds in Q1 2014.\(^{883}\) BT stated in its response to the July 2013 FAMR Consultation that over 80 CPs used VULA as an input to their superfast broadband services, with 17 of these buying VULA directly from Openreach.\(^{884}\) TalkTalk reported 207,000 fibre subscribers (i.e. VULA customers) as of 31 March 2014\(^{885}\), while Sky had [X] and EE had [X] as of 31 December 2013\(^{886}\).

\(^{880}\) An uncontended service is one in which the bandwidth to each user is dedicated. In other words, the bandwidth is not shared by other users.

\(^{881}\) We note that BT already had in place a product similar to VULA called Generic Ethernet Access (‘GEA’), before the conclusion of the 2010 WLA Review. For simplicity, we use the term VULA in this document with some limited exceptions where appropriate.

\(^{882}\) I.e. where the CP provides its own modem rather than using Openreach’s. Paragraph 66, *BT response to the July 2013 FAMR Consultation*, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf). This issue is discussed from paragraph 12.74.


\(^{886}\) Quarterly CP data provided to Ofcom.
Policy proposals as set out in the July 2013 FAMR Consultation

12.27 We proposed requiring BT to supply a VULA product providing access to its NGA network. This was on the basis that VULA enables CPs to provide NGA services in competition with BT, which supports competition and investment in the supply of NGA-based products in downstream markets. We stated that we continued to consider that the lack of significant deployment of new NGA networks by other CPs meant that, if VULA was not available, then CPs would likely be without a viable WLA remedy that would enable them to compete with BT in the provision of NGA services.

12.28 We also proposed that the current VULA characteristics remained appropriate. We said that, considering the limitations of non-physical layer access, we considered the existing characteristics allowed reasonable control and flexibility such as to enable CPs to provide differentiated services in competition with BT over its NGA network. We proposed not to alter the existing VULA characteristics (including specifying them in greater detail), add new characteristics nor include the characteristics in the SMP condition itself.

Stakeholder responses to the July 2013 FAMR Consultation

12.29 In the July 2013 FAMR Consultation, we asked the following questions in relation to VULA and the key characteristics:

11.1 Do you agree with our proposal to require BT to offer VULA and with the five key characteristics identified? Please provide reasons in support of your views, including, if you think alternative or additional characteristics are required, evidence of how you would use them to offer services to your customers.

887

12.30 [☐] agreed that BT should be required to offer VULA as an essential remedy in the market. It considered the five characteristics largely sensible (provided BT adhered to them) though also welcomed moves for ‘glass-only’ and self-install products that would reduce its dependence on BT and associated issues with lead times and engineering visits, as well as providing it with the ability to differentiate and innovate.

12.31 It particularly noted it would welcome business-grade VULA offerings including control of quality of service and other business relevant features. However, in relation to the local access characteristic, it noted while this might be economically efficient for a residential-focused LLU operator with an existing unbundling infrastructure, LLU had never been cost effective for a business-focused CP. In moving to NGA, it argued that the financial case for building out to each relevant BT local exchange to serve the business market became even weaker and, as such, this significantly undermined VULA as a general solution for the business market.
12.32 BT agreed with the proposal to require it to offer VULA and that the key characteristics were appropriate at this stage of market development.

12.33 It said that Ofcom’s choice of the term VULA underlined that VULA was the fibre equivalent of LLU in terms of the economics of reach and handover, and the scope for downstream innovation and differentiation. It said the approach of using high level characteristics rather than a specific product specification was the right one as it had enabled innovation (e.g. wires-only and Fibre Voice Access (‘FVA’)) and supported product evolution by permitting sufficient flexibility in product design while guiding the appropriate minimum features required and the direction of product change.

12.34 BT said that, as the superfast broadband market was still nascent, it believed GEA would continue to evolve further over the next and subsequent review periods, and therefore detailed product specifications at this early stage were still likely to impede such change and not be able to correctly anticipate and support the next technological steps (e.g. vectoring, DSL acceleration technologies).

12.35 BT said it developed GEA in an open and consultative way with its customers through the SoR process, the NGA Industry Working Group, the NGA In-life monthly audios, plus various specific product, systems and technical workshops. It said the track record on development since the last review was substantial and this included the two most significant additions to the portfolio proposed in the 2010 WLA Review – ‘wires-only’ and FVA. BT also listed what it described as other significant examples of collaborative developments since the last market review, including the 80/20Mbit/s FTTC product, multicasting, FTTP on Demand, an extensive range of new FTTP products with wide ranging speed capabilities, and the vectoring trial, which BT said was in progress with the imminent roll-out of vectoring compatible DSLAMs to begin in 2013 and vector-ready technology being deployed in the network from 2014.

12.36 BT said that with regard to the use of VULA-based products for business services, it was confident that the wide variety of options offered by the current GEA portfolio would meet the growing demands of business and residential customers alike. In particular, the higher bandwidths delivered by 80/20 FTTC, FTTP and FTTP on Demand products, coupled with the wide range of services and high speed performance were characteristics that it felt were highly suitable for meeting the broadband, data and voice needs of the business market. It said that CPs could raise additional requirements through the existing industry forums and the SoR process.

12.37 BT said that GEA was already well matched with the VULA characteristics, but that Openreach remained committed to continuing to work with its customers on future requirements, on a transparent development process, and, through publication of future product roadmaps, to bring about changes they were seeking and which were in line with BT’s strategic investment plans.

12.38 BT said that it had a challenging and long term business case which meant that all major NGA product developments at the Openreach level needed to be assessed for their impact on the investment case and the potential to increase investment risk,

extend payback and undermine the opportunity to achieve a reasonable return over
the lifetime of the assets.

Colt Technology Services Group Ltd. (‘Colt’)

12.39 Colt said that, with regard to the distinction between leased lines and other forms of
NGA, Ofcom’s segmented approach introduced several market distortions that
operate against the public interest, including denying business-oriented CPs the
means of competing effectively against the growing array of substitute products
arising from residential NGA deployments. It said this effectively left the market for
marginal customers (marginal in the sense that they required higher bandwidth
services with business oriented SLAs but did not require the higher quality
characteristics of products that Ofcom defined as ‘leased lines’) almost entirely to
BT.889

12.40 Colt also said that a further factor that must be considered was the obsolescence of
LLU and the lack of any commercially viable replacement. It said that, currently,
business customers received leased line services via EFM (using LLU) yet VULA
offered no direct substitute. Therefore, VULA could not be considered an adequate
substitute to LLU. Colt noted and welcomed the efforts that Ofcom had taken to
ensure VULA emulated LLU’s characteristics/benefits but said no method of
emulation was perfect and, while welcome, essentially amounted to retrofitting the
service features of LLU to VULA when in many cases VULA was not designed to
support them.890

EE891

12.41 EE believed that BT should continue to be required to offer VULA, as the remedy had
been important in allowing non-BT CPs to offer downstream superfast broadband
products and particularly because there has been no significant deployment of NGA
networks by other CPs.

12.42 EE reiterated the points made in its response to the 2012 FAMR Call for Inputs in
relation to FVA. It considered that BT would have SMP in the provision of fibre voice
services in fibre-only areas. EE anticipated that the number of such areas would grow
over the market review period, and as such strongly believed that BT should be
subject to general WFAEL remedies in relation to the provision of FVA and a specific
charge control. EE argued that the reason why BT Wholesale had no take-up of its
Fibre Line Calls service was that the price was extremely high. It also argued that BT
has no obligation to continue its reduced FVA price offer and, as such, offered CPs
no commercial comfort going forward.

12.43 EE argued that BT should be required to provide additional VULA features for those
operators that wished to use the NGA infrastructure differently. It said this could in the
future include additional business-grade features for VULA. EE argued that the SoR
process was not a robust route for seeking these additional changes given that it

889 P.4, Colt response to the July 2013 FAMR Consultation,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Colt.pdf.
890 P.17, Colt response to the July 2013 FAMR Consultation,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Colt.pdf.
891 Pp.13-14, EE response to the July 2013 FAMR Consultation,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.
appeared BT took commercial considerations into account (including the risk of cannibalisation of other BT product lines).  

12.44 EE said it welcomed Openreach’s self-install trial and has been actively participating in it. [ skeptic ] EE therefore urged Ofcom to actively monitor any further delays in the commercial launch of the self-install service. 

Sky

12.45 In its response to question 11.10 in relation to FTTC unbundling (see paragraph 12.436), Sky said that GEA was inconsistent with the VULA characteristics in the following ways:

* characteristic (i): there was no local interconnect available at the cabinet with GEA;
* characteristic (ii): GEA was not fully service agnostic as CPs had to pay extra for different speeds;
* characteristic (iii): there was contention on the backhaul from the cabinet to exchange and a threat by Openreach to charge for throughput; and
* characteristic (iv): there was a lack of control of the service (e.g. the ability of a CP to set the speed and quality of service characteristics of GEA).

12.46 Sky considered that the lead times for a wires-only install should at the very least be no longer than a full install (if not shorter as no home visit is required). It reported that under the current wires-only trial the lead time was nine days compared to five for a full engineer install, and BT had not provided any justification for the differential. It requested Ofcom provide a clear steer to BT that it expects wires-only installations to have the same, if not better, service delivery timescales than full engineer installs.

12.47 Sky echoed TalkTalk’s concerns in relation to non-Openreach engineers being able to access the Network Termination Equipment (‘NTE’) and urged Ofcom to require BT to provide such access. It argued that doing so would enable CPs to provide a more efficient ‘one visit’ installation service. It considered any benefits of a wires-only installation would be negated if it were necessary in any event for an Openreach engineer to attend the customer’s home.
TalkTalk

12.48 TalkTalk’s said its and other CP’s ability to compete effectively and offer genuine choice and innovation to consumers depended on the specification of the wholesale VULA product (as well as the VULA margin). However, it said the VULA product had been and remained far from ideal for supporting effective competition. It set out three ways it should be improved – unbundled FTTC (considered from paragraph 12.453), FTTP unbundling (from paragraph 12.444) and non-Openreach NTE installation. It said its proposals could be implemented through an SMP condition, direction, detailed guidance or a functional specification (with a preference for the first two).

12.49 TalkTalk said that Ofcom should impose an obligation to require Openreach to allow non-Openreach engineers to install an NTE5 where one was not present, which it considered would be a fairly straightforward feature. It considered the inability to do so could mean a poor customer experience as it could result in additional home visits. TalkTalk considered Openreach reasons for not allowing this were not valid. It did not think it necessary for Openreach to have to develop systems to record the work done by CPs as there was no reason that suitably trained engineers would perform poorer quality work than BT’s own engineers and contractors.

12.50 TalkTalk said that the approach of setting out the key characteristics had not been sufficient to ensure timely product development. It said this favoured BT as it allowed it to do what it wanted and the characteristics were not as effective as they could have been because they were open to different interpretations as well as being “merely” guidance rather than directions or conditions. It said while Ofcom may consider that overly precise requirements risked being inappropriate it must recognise that imprecise and ambiguous requirements simply played into BT’s hands by allowing BT to do what it wished.

Verizon

12.51 Verizon considered that VULA was not fit for purpose for business services and that a set of characteristics suitable for business use should be introduced. It said that as its business model did not include a requirement for access into BT’s local exchanges, it did not consider that VULA in its current state would be of benefit to Verizon.

Virgin

12.52 Virgin said it agreed with the proposal to require BT to offer VULA and considered that the five key characteristics were appropriate.

Vodafone

12.53 Vodafone said it supported the ongoing requirement for BT to provide VULA. It said it had set out its concerns with the development of competition for the provision of NGA services in its response to the 2012 FAMR Call for Inputs, namely that Ofcom's light touch regulatory approach had weakened CP's competitiveness, BT had total control of NGA product development, and that BT had control of the value chain through setting the wholesale input cost and having the leading market share for retail broadband. It said these factors had disincentivised other CPs from heavily engaging in and promoting NGA.

Analysis including Ofcom’s response to stakeholder responses

Requirement to provide VULA

12.54 We have decided to require BT to supply a VULA product providing access to its NGA network. This provides a form of non-physical (virtual) access, which, as far as possible, replicates many of the features of a physical access remedy such as LLU.

12.55 As our analysis of the WLA market shows, the level of investment required by a third party to replicate BT's NGA network to compete at this level is a significant barrier to entry. We consider that, in the absence of such a requirement, for the reasons set out above, BT would have an incentive and ability to refuse access at the wholesale level and thereby favour its own retail operations with the effect of hindering sustainable competition in the downstream market, ultimately against the interests of end-users.

12.56 We consider VULA will continue to be the main NGA remedy in use – even more so than we envisaged in the last market review given that we do not have firm evidence of material plans to deploy new networks using PIA or SLU.

12.57 We note that, overall, no stakeholder specifically argued for VULA to be removed as a remedy. We think that to do so would result in there being no remedy that would be used on a material scale by CPs to offer downstream competition to BT in superfast

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902 P.15, Virgin response to the July 2013 FAMR Consultation,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Virgin_Media.pdf.

903 P.22, Vodafone response to the July 2013 FAMR Consultation,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Vodafone.pdf.

904 Pp.10-11, Vodafone response to the July 2013 FAMR Consultation,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Vodafone.pdf.

905 We acknowledge the argument that VULA is not a like-for-like replacement for LLU, however it is not possible to require BT to provide the exact equivalent for LLU (i.e. unbundled point-to-point fibre) as BT has not made such deployments in its access network.

906 We note that in requiring BT to offer VULA to facilitate such competition, we have taken into account BT’s investment in its NGA network, having had particular regard to this in determining our approach to VULA pricing as set out from paragraph 12.113.
services. This is particularly the case given the lack of firm plans to deploy NGA by other CPs using SLU or PIA. We consider that such an outcome would limit competition in the supply of broadband services, particularly at the retail level to the detriment of consumers.

Analysis of the VULA key characteristics and BT’s GEA product

12.58 Having decided to continue to impose a requirement on BT to provide VULA, it is also necessary to reach a conclusion on the extent to which GEA as currently provided by BT fulfils the VULA key characteristics we set out in the 2010 WLA Statement.

12.59 We do so by considering each VULA key characteristic individually, first by assessing whether or not BT’s GEA product meets these characteristics and second by assessing whether it is appropriate to continue to apply each as a ‘key characteristic’ of the VULA remedy in order to address the competition concerns identified. We then consider alternative or additional characteristics and the appropriate way in which the characteristics are applied.

Localness

12.60 GEA extends between the end-user premise and the local serving exchange. In the case of FTTC, the local serving exchange is the site where FTTC deployments are aggregated. In the case of FTTP, the local serving exchange is the site where the FTTP ‘head end’ equipment is accommodated. We continue to consider that this fulfils the characteristic of local access in both cases.

12.61 We also continue to consider that this characteristic is appropriate and in the same form as applied in the 2010 WLA Statement. It ensures that VULA is a remedy that is appropriate to the defined WLA market (the fixed connection from the local exchange or access node to the end-user).

12.62 Interconnection at the local serving exchange means that CPs only buy the access connection. It therefore allows competing CPs to arrange (or build) their own backhaul and core networks, maintaining control over as many of the network elements as possible.

12.63 This provides competing CPs with complete flexibility over the architecture and dimensioning of the backhaul and core network elements. Further, to the extent that the VULA local serving exchange coincides with an LLU local serving exchange the CP is able to combine VULA traffic with LLU traffic on its network. We disagree with Sky that GEA is inconsistent with the key characteristics as it does not offer interconnection at the cabinet. We consider interconnection at the fibre exchange offers the most technically and economically feasible interconnection point based on current OCP network architectures (i.e. their LLU networks). We note that Sky’s proposal concerns the provision of an additional interconnection point, which we consider from paragraph 12.453.

12.64 Local interconnection also provides foundations which support some of the other key characteristics which we consider necessary for VULA. For example, uncontended access to capacity to a given end-user would be more difficult to ensure the further point of interconnection moves into the network.

12.65 We note [¶] argument that the business case for deploying to fibre exchanges to serve the business market was weak and as such undermined VULA as a general
solution for the business market, and Verizon’s similar comment that as its business model did not include a requirement for access into BT’s local exchanges, it did not consider that VULA in its current state would be of benefit. While we further address additional features for business use below, we note that (independent of any specific business-grade requirements) wholesalers may choose to aggregate VULA-based services at a higher level using regulated leased line products or their own network. We note that BT Wholesale offers such a service through its WBC-FTTC product and that other CPs can do likewise.

Service agnostic

12.66 GEA is an active Ethernet connection at Layer 2 in the Open System Interconnection (OSI) framework that allows voice, data, or video services to be carried via a converged access network either as a single virtual channel or separated into multiple virtual channels. As in the 2010 WLA Statement, we continue to consider GEA fulfils the service agnostic characteristic. We therefore disagree with Sky that requiring CPs to pay extra for different speeds means that GEA is not fully service agnostic, as different speeds are not a different service but simply different bandwidths for the same basic access connection. We also discuss this issue in paragraphs 12.73.

12.67 We also continue to consider that this characteristic is appropriate and in the same form as it was applied in the 2010 WLA Statement. The WLA market definition focuses on generic telecommunications access, rather than any particular service. Service agnosticism means that VULA can be used to support voice services, broadband services and video services. This flexibility maximises the potential for innovation of the sort we have seen through LLU leading to the greatest competition benefits.

Uncontended

12.68 GEA as currently deployed is based on specific product options which define a Prioritisation Rate (‘PR’). This can be regarded as providing dedicated or uncontended access. We understand that BT intends to upgrade its infrastructure as required to continue to meet its PR frame drop SLA. We consider that providing what might be considered ‘true’ uncontended access is unlikely to be an efficient use of the shared ‘backhaul’ component of the FTTC connection, noting it could limit the headline speeds BT could offer. Therefore, we continue to consider that GEA is ostensibly uncontended and therefore compatible with this characteristic.

12.69 We continue to consider that this characteristic is appropriate and in the same form as it was applied in the 2010 WLA Statement. This will ensure that the purchasing CP retains control of the degree of contention involved in providing the services it chooses to offer to its end-users. This will thereby support innovation leading to the greatest competition benefits.

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907 Packets within the PR are treated as ‘should not drop’ which allows sensitive applications to have greater protection under congestion.
908 The target frame drop SLA is that the network is able to support 99.9% of the prioritised GEA data traffic volume that is sent in the peak three hour period under normal conditions.
909 e.g. 25Mbit/s of dedicated backhaul bandwidth to support a 25Mbit/s connection between the cabinet and the premise.
910 i.e. between the fibre exchange and the cabinet.
Control of access

12.70 BT currently offers three generic dynamic line management profiles for its FTTC-based GEA products, each with a different trade-off between line speed and line stability. This would appear to offer the interconnecting CP with a reasonable level of control. However, should additional profiles or greater control be required by CPs, we would expect BT, consistent with the requirements in the general remedies, to meet any such reasonable requests. It should be noted that being able to prioritise packets by defining a PR, as set out above, allows additional control.

12.71 We note that BT’s FTTP-based GEA products do not currently offer the same control. However, as FTTP does not use copper lines, it does not suffer the same limitations such as a trade off between speed and stability.

12.72 We continue to consider that this characteristic is appropriate and in the same form as it was applied in the 2010 WLA Statement. It enables CPs to provide different types of services and, by allowing CPs to alter certain control parameters, CPs are able to determine and control the type and level of service they provide. This helps to realise competition benefits by allowing CPs maximum flexibility and innovation in their ability to offer differentiated products to consumers.

12.73 We do not agree that this characteristic should extend to allowing the CP to set the absolute speed of the connection completely independently of BT (i.e. GEA is sold as a single product that can support whatever the maximum the current technology employed by BT permits). This could cause contention issues on the backhaul as well potentially reduce the incentive for BT to upgrade its network to deliver higher speeds as it may be unable to charge differentially for these increased speeds.

Control of CPE

12.74 Similar to the control of access characteristic described above, allowing competing CPs the ability to control CPE is crucial in ensuring that the potential competition benefits of VULA are realised. Allowing CPs the freedom to choose CPE provides the flexibility needed to ensure CPs are able to differentiate how they deliver services to their customers. Unnecessarily preventing, or limiting, the control CPs have over CPE risks undermining some of the benefits to consumers that VULA may provide. Restricting the type of CPE (other than in accordance with generally recognised and accepted standards) would limit CPs ability to offer differentiated and innovative products.

12.75 We continue to consider that this characteristic is appropriate and in the same form as it was applied in the 2010 WLA Statement. However, we note that CPs have been calling for wires-only and alternative installation arrangements under this heading and, while BT has responded to these calls, introducing such changes has been slower than some CPs had hoped. Below we discuss the current status of the presentation and installation of BT’s GEA products for FTTC and FTTP separately.

FTTC (VDSL)

12.76 We note BT’s commencement on 31 December 2013 of an ‘early market deployment launch’ of two new GEA-FTTC installation options that it stated will last approximately
The first is ‘Managed Install with CP device’ (also known as ‘wires-only’) which allows the CP to provide and be responsible for the end-user’s VDSL modem (as an alternative to BT’s current presentation of an Ethernet port on an Openreach-provided VDSL modem). The Openreach engineer continues to visit the end-user premise to perform the installation of the CP’s own VDSL modem and other work.

The second, ‘PCP-only’ (also known as ‘self-install’) excludes from the above the Openreach engineer performing the installation at the customer premise. The Openreach engineer solely performs the jumpering at the local street cabinet (also known as the primary cross-connect point, or PCP). This enables the CP to choose how its VDSL modem is installed, either by the CP’s own technician or the end-user themselves.

We note that wires-only and alternative installation arrangements have taken some time to implement and we understand CPs’ concerns. We therefore welcome the early market deployment launch and strongly urge BT to progress to a full launch as soon as practical.

We note Sky’s argument that the lead time for a PCP-only installation should be no longer than an engineer-led installation (five days). This has been addressed by BT and the lead times are now the same.

In relation to Sky and TalkTalk’s proposal that non-Openreach engineers should be able to upgrade the NTE, we firstly note that based on our understanding, this is an issue where all of the following apply – under the PCP-only installation option where a CP is using its own engineer to install the VDSL modem and where a customer is dissatisfied with their speed as a result of not having an NTE. We note that where a customer is self-installing the VDSL modem, an option we expect a number of CPs to adopt and which subsequently requires the NTE to be upgraded, the efficiency from Sky and TalkTalk’s proposal would come from the fact that a non-Openreach engineer rather than an Openreach engineer could change the NTE (in other words an engineer visit would be required in any event).

We support measures to increase the efficiency of the installation process (e.g. self-install) and note the direct benefit that this could have on affected end-users without having to have repeated engineer visits. However, the proposal is to allow non-Openreach engineers to carry out work on what is part of the Openreach network, i.e. sitting on the Openreach side of the demarcation point. Therefore, if there were problems with the work carried out by the non-Openreach engineers, this could cause operational issues for Openreach. It could also raise questions about liability and ultimately responsibility for rectifying the problem in the event there was a dispute about the work carried out by non-Openreach engineers. Without these issues being addressed, it is not clear to us at this stage that the benefits of this access outweigh the potential disadvantages.

912 We note that this includes a CP test verification facility to ensure CP equipment is compatible.
913 BT does not offer ‘PCP-only’ using an Openreach VDSL modem.
12.82 We note that BT has provided a briefing on why it has chosen to collect further data to assess the SoR. We note it has left open the SoR request pending TalkTalk launching PCP-only installations to determine how often the above described situation occurs and that if the SoR is ultimately rejected then it is open to parties to bring this to us as a dispute. At this point in time however we do not consider it appropriate to require BT to offer such access but welcome further evidence about the extent of the likely issue.

FTTP (GPON)

12.83 BT does not currently offer a wires-only presentation (or, more accurately, ‘glass-only’) or self-install option for FTTP. We recognise that there are currently low volumes of FTTP and, as discussed in paragraph 12.10, we expect that this will remain the case over the market review period. However, we continue to consider that similar considerations should apply as discussed above in the context of FTTC and that, accordingly and consistent with the general network access remedies, BT should be prepared to meet reasonable requests for alternative methods of presentation and alternative network demarcation points where this is technically and economically feasible.

Additional or alternate characteristics

Additional features for business use

12.84 We observe that VULA is today being used to offer business services, with a number of CPs marketing VULA-based business products. Openreach also sets out the suitability of VULA for business use on a dedicated webpage. We note that GEA currently offers a range of different options including DLM profiles, traffic prioritisation, and repair service levels (including one with a six hour clearance time), as well as specific features including IL2 assurance, a throughput report and a frame drop SLA. Some of these features were added by BT after being raised as an SoR.

12.85 It is currently unclear what further key characteristics might be needed for a VULA business product that cannot reasonably be fulfilled by the current product. However, we note that VULA has been designed in such a way so as to allow maximum flexibility in its use. Should there remain specific requirements for a particular business product feature, CPs may want to raise a further SoR for that feature (if they have not already done so). We also note that if a CP believes that an SoR has been unjustifiably rejected by BT, then that CP is able to bring a dispute to Ofcom. The SoR process is discussed more generally in Section 10.

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915 Note that, as FTTP does not use the existing copper infrastructure, there are significant differences in the installation.
916 http://www.openreach.co.uk/orpg/home/products/super-fastfibreaccess/sffaforbusiness/fbreforbusiness.do.
917 Openreach, Repair Service Levels Price List, 12 April 2012 http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=o1GUUA4oSGmoXU5lc%2BqZQD26sl6W32TNneEUJw1FZ6rNzujncs99NbiKZPD9hxYmijpH6wr%0ACQm97GMyQ%3D%3D.
918 IL2 assurance is a certification that verifies the security level of a network. Government departments including local government are covered by such security standards.
919 As noted in paragraph 12.68.
920 Noting that the SoR itself was ultimately rejected by BT.
12.86 With respect to Colt’s argument that the market for ‘marginal customers’ (which require some but not all of the higher quality characteristics of a leased lines) was left entirely to BT, we note that BT is required to supply VULA on an EOI basis to all CPs, meaning that any particular VULA variants targeted at business users must be offered to other CPs. In line with our comments in paragraph 12.65, we note that a wholesale CP could offer a level of aggregation more suitable to business CPs to take advantage of any such products and opportunities and compete with BT.

Fibre Voice Access

12.87 BT offers an FVA product, which provides a PSTN equivalent voice service between the voice analogue telephony adapter on the optical network terminal (‘ONT’) and the exchange.

12.88 There are two circumstances in which an area covered by BT’s network could be ‘fibre-only’ (i.e. where there is no copper in use) – in new build areas with a network constructed by BT\(^{921}\) and in fibre-only exchange (‘FoX’) areas where BT switches off the copper.\(^{922,923}\)

12.89 In relation to the former, we set out in our 2008 Next Generation New Build Statement that it may be impractical and/or unnecessary for BT to replicate exactly the existing regulatory products in new build areas and as such we would adopt a pragmatic approach to the wholesale products that are used to fulfil any regulatory obligations or expectations.\(^{924}\)

12.90 In relation to FoXs, BT set out in its 2012 FAMR Call for Inputs response that it did not expect to withdraw products or remove copper-based services in the FoX pilot areas until there was sufficient choice of suitable voice and access fibre-based alternatives. We note that until such a time, WLR remains available in these areas.

12.91 FVA can be considered as a way in which BT is attempting to fulfil its regulatory obligation to provide a voice service to customers over fibre-only networks. We note that BT currently has in place a reduced price offer for FVA, although we recognise EE’s concern that it does not have commercial comfort that this will continue.

12.92 We acknowledge that FVA does not replicate the current copper-based wholesale voice products. However, as technology changes, the appropriate remedies and ways of implementing those remedies may change, which is why we do not consider that it is necessary to exactly replicate existing regulated products in new build areas.

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\(^{921}\) Non-BT new build areas are addressed in Section 7. However, we note that the 2008 Next Generation New Build Statement set out that universal service providers (e.g. BT) can fulfil their obligation in such areas to provide connections by means of obtaining commercial contracts with a third party provider of local access infrastructure (Ofcom, Next Generation New Build: Delivering super-fast broadband in new build housing developments, 23 September 2008, http://stakeholders.ofcom.org.uk/binaries/consultations/newbuild/statement/new_build_statement.pdf).

\(^{922}\) This is currently being trialled in Deddington. For further information on this trial, see www.openreach.co.uk/orig/home/products/super-fastfibreaccess/fibreonlyx/fibreonlyx.do.

\(^{923}\) It is noted that both cases could also theoretically apply in relation to KCOM’s network.

In some cases it may not be technologically possible to replicate existing products or where it is possible, it may only be possible at a cost that is greater than a more practical alternative, particularly where relatively low volumes are involved.

12.93 To this end, in relation to FoXs, we note that BT Wholesale consulted on a product called Fibre Line Calls (‘FLC’) that would consume FVA. While there was some interest in such a product, we understand no CP was willing to commit to taking it at that stage. Accordingly, BT Wholesale indicated in November 2012 that it would not be developing FLC for launch in June 2013 as originally proposed but that it was willing to work with any CP in the Deddington FoX pilot area that was prepared to commit to consuming FLC in that area.

12.94 To the extent that FVA (and any additional services provided by BT) proves to be an effective product that fulfils BT’s obligations and supports voice competition, there may not be a need for any additional obligations. However, if competition for voice services does not develop in fibre-only areas we may need to consider an appropriate service that does support competition. However, we note that this would not necessarily involve replicating the existing copper-based wholesale voice products.

12.95 Accordingly, and particularly in light of the low volume of premises in fibre-only areas over the review period, we consider it would be disproportionate at this point in time to require BT to offer an exact equivalent of WLR in fibre-only areas (including being subject to a charge control as suggested by EE), particularly in light of uncertain demand for such products. However, we would still expect BT to fulfil its existing regulatory obligations in these areas and encourage BT to continue to engage with industry on these matters. We will continue to monitor the development of voice products in fibre-only areas.

Application of key characteristics

12.96 As set out above, we have found that BT’s GEA product broadly complies with the existing key characteristics we set out for VULA and have decided to continue to apply these key characteristics for the market review period. In light of this, we consider it is appropriate to continue to apply them in this way, rather than as part of the SMP condition or direction as suggested by TalkTalk, as it allows flexibility with respect to the development of VULA which remains an evolving product.

Final policy conclusion

12.97 We have decided to require BT to supply network access in the specific form of a VULA product providing access to its NGA network. VULA enables CPs to provide downstream NGA services in competition with BT, which supports competition and investment in the supply of NGA-based products in downstream markets. The

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925 For example, in the same way it is not possible over an FTTC or an FTTP GPON network to provide the direct equivalent of LLU of unbundled point to point fibre links.

926 FLC aims at providing a BT Wholesale voice service to CPs that do not have a network and/or Call Server capability and wish to provide a voice service to their end-user served by Openreach FTTP access within the Deddington FoX Pilot area.

927 BT stated that the total number of FTTP premises excluding FTTP on Demand was \[\text{[\text{\ldots}]\] as of 31 December 2013 and forecasted \[\text{[\text{\ldots}]\] on 31 March 2017. We would note that only a subset of these would be ‘fibre-only’ and thus would not have access to WLR as an alternative.
condition is set out in full in Annex 29. The requirement to offer VULA is in addition to and supplemented by the general remedies, which include, among other requirements, the provision of VULA on fair and reasonable terms, conditions and charges\(^{928}\), no undue discrimination, and EOI.

12.98 We consider that the current VULA characteristics set out above remain appropriate. Considering the limitations of non-physical layer access, the existing characteristics allow reasonable control and flexibility such as to enable CPs to provide differentiated services in competition.

**Legal tests**

12.99 We consider that the obligation to provide network access by means of VULA services, together with such ancillary services as may be reasonably necessary for the use of those services, is appropriate and satisfies the legal tests set out in the CA03.

12.100 Section 87(3) of the CA03 authorises Ofcom to set SMP services conditions requiring the dominant provider to provide such network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

12.101 In setting this condition, we have also taken into account the factors set out in section 87(4) of the CA03. In particular, the economic viability of other CPs building alternative access networks. We consider the economic case for doing so is challenging and the prospect relatively limited (compared to the prospect of competition being encouraged by VULA, although as set out below we continue to consider remedies such as PIA and SLU to be potentially valuable). We have also taken account of the feasibility of BT providing VULA services, which it does through its GEA product. We consider that the condition should help secure effective competition in the long term and have taken account of BT’s investment in its NGA network, both as set out above in terms of an obligation to provide access and, as set out later in this section, in terms of pricing flexibility for the provision of that access.

12.102 We have considered our duties under section 3 and the Community requirements set out in section 4 of the CA03. In particular, the condition is aimed at encouraging network access and thereby promoting and securing efficiency and sustainable competition for the maximum benefit of retail customers. VULA will enable other CPs to compete with BT in downstream narrowband and broadband markets with respect to NGA services in those areas where BT rolls out an NGA network. We consider that these services are likely to be an important element of this market over the forward looking period of this review.

12.103 In that way, we consider that the performance of our principal duty in section 3 of the CA03 will also be secured or furthered in relation to this VULA remedy, namely to further the interests of citizens in relation to communications matters and to further the interests of consumers in relevant markets. We have also had particular regard to

\(^{928}\) Note that the requirement for fair and reasonable charges is removed for the GEA migration charges as explained in paragraph 12.197.
the desirability of encouraging the availability and use of high speed transfer services throughout the UK in setting this condition.

12.104 The condition satisfies the criteria set out in section 47(2) of the CA03 because it is:

- objectively justifiable, in that it relates to the need to ensure that competition develops ultimately to the benefits of consumers. VULA services are aimed at stimulating competition in the provision of broadband and telephony services and enhancing competition in areas of limited local access competition. We consider that VULA currently is, and will for at least the market review period continue to be, the primary basis of competition for NGA-based high speed services;

- not unduly discriminatory, in that the condition aims to address BT’s market power in the relevant market and we have concluded that only it has such power in the UK excluding the Hull Area (and as the obligation imposed on KCOM to provide network access on reasonable request is sufficient to ensure that KCOM provides VULA or equivalent services in the Hull Area should a reasonable request be made);

- proportionate, in that the requirement is necessary, but no greater than necessary, to promote efficiency and sustainable competition for the maximum benefit of retail customers; and

- transparent, in that it is clear in its intention to require BT to provide VULA services to other CPs and its intended operation should also be aided by our explanations in this document.

12.105 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the CA03.

**Consistency with the EC recommendations and the BEREC Common Position**

12.106 We consider that applying a VULA remedy is consistent with the NGA Recommendation, the Costing and Non-discrimination Recommendation and the BEREC Common Position, of which we are required to take utmost account.

12.107 While not covered by the Articles, Recital 21 of the NGA Recommendation states:

> “NRAs should be able to adopt measures for a transitional period mandating alternative access products which offer the nearest equivalent constituting a substitute to physical unbundling, provided that these are accompanied by the most appropriate safeguards to ensure equivalence of access and effective competition. In any event, NRAs should in such cases mandate physical unbundling as soon as technically and commercially feasible”.

12.108 The Costing and Non-discrimination Recommendation also refers to the imposition of “non physical or virtual wholesale inputs”.  

929 For example, although it concerns the pricing approach, Recommendation 49 implicitly assumes the imposition of “non physical or virtual wholesale inputs”.  

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12.109 The BEREC Common Position similarly provides that in the case of FTTC, “NRAs may consider imposing an active remedy providing access at the MPoP replicating as much as possible physical unbundling”, (BP7c) and in the case of FTTP “Until any alternative technologies allowing physical unbundling at the MPoP become available the NRAs should consider imposing an active remedy providing access at the MPoP replicating as much as possible physical unbundling” (BP6).

12.110 We consider that VULA offers the nearest equivalent to physical unbundling over both FTTC and FTTP and that, as discussed from paragraph 12.444, we do not consider that physical unbundling of FTTP is likely to be technically and/or commercially feasible over the market review period.

12.111 In relation to BP25 which states that “NRAs should consider which information on the SMP-operator’s ‘newly’ rolled-out NGA network is essential to competitors and should be available well in advance on a non-discriminatory basis”, we note the SMP condition in Annex 29 requires BT to provide VULA to third parties with the same commercial information as BT provides VULA to its downstream divisions.

12.112 We do not consider BPs 36-40 concerning copper switch off are relevant as BT stated in its 2012 FAMR Call for Inputs response that “BT is not planning to switch off its copper network for the foreseeable future”.

General approach to cost-based VULA pricing

Introduction

12.113 As noted above, the requirement to offer VULA is in addition to the general remedies. This includes, among other requirements, the provision of VULA on the basis of fair and reasonable terms, conditions and charges, no undue discrimination and EOI.

12.114 This sub-section sets out our conclusions regarding our approach to cost-based VULA pricing while the next sub-section sets out our proposals with regards to GEA switching. We have given further consideration to our proposals regarding the VULA margin and will shortly publish a revised set of proposals in the forthcoming 2014 VULA Margin Consultation.

Policy proposals as set out in the July 2013 FAMR Consultation

12.115 In the 2013 FAMR Consultation, we proposed to continue to allow BT flexibility on VULA pricing and terms, including on the absolute level of prices, geographic variations, changes over time and some flexibility on tiered pricing. We proposed that this flexibility would be within the constraints imposed by the fair and reasonable terms, conditions and charges obligation that we set out in Section 10.

Stakeholder responses to the July 2013 FAMR Consultation

11.2 Do you agree that BT should continue to be allowed general pricing flexibility on VULA, subject to a fair and reasonable charges obligation? Please provide reasons in support of your views.
EE

12.116 [930] disagreed that BT should continue to be allowed general pricing flexibility on VULA. While it noted the highlighted risk of price controls restricting investment (i.e. by BT), it considered the same risk of under-investment existed where the SMP provider set prices too high or in other ways discouraged investment by competitors. [930] considered that the 87% share of VULA connections held by BT’s retail division was clear evidence the latter was the case. It considered that other CPs did not have sufficient confidence to invest significantly in VULA-based services without the certainty of an appropriate and transparent level of pricing.

12.117 [930] was very concerned that, in an effort to avoid pricing intervention in the short term, Ofcom was simply creating yet another market distortion that would generate significant consumer harm and would require even more intervention in the longer run. It considered the risk of restricting the national rollout of superfast broadband applied most particularly to business markets and to non-Virgin areas. [930] considered it would be possible to create the right sort of investment incentive for BT by selecting the higher of Long Run Incremental Costs ('LRIC'), LRIC+, Fully Allocated Costs ('FAC'), DSAC etc, so delivering the higher returns needed to encourage risky investment while also giving price certainty and transparency. [930] also considered that there was now more than enough data available to generate an acceptable pricing model.

BT

12.119 BT agreed with the proposal to allow general pricing flexibility on VULA and said that Ofcom’s approach to the pricing of VULA remained appropriate with no changes required. It also noted that the Costing and Non-discrimination Recommendation was very supportive of the Ofcom approach. BT said it was essential the current policy be maintained for this and future reviews, noting that regulatory certainty and consistency of approach were key to BTs initial investment decision and this remained so through the next immediate phases of the product life cycle where significant uncertainty remained on both the demand and supply side.

12.120 BT said that it provided NGA wholesale products on an EOI basis and that there should be no pricing regulation until it had achieved pay back on its highly risky investments. BT said that NGA-based products were still in the early stages of their life-cycle, and by its very nature the investment case was very long term with highly uncertain demand. Accordingly, it said that product pricing needed to be very flexible to stimulate demand, deal with customer acquisition, and meet customer expectations in terms of special offers, discounts and overall price levels.

931 [930]
12.121 BT said that a strict ‘cost-based’ approach using LRIC, for example, would prove highly inflexible and would likely restrict investment, potentially restricting demand given the uncertain levels of take-up and the need to compete for new customers in a fast evolving market. It said such an approach could also result in an increase in wholesale charges if an insufficiently long term view was applied. It agreed that CGA exerted a significant constraint on the pricing of GEA. For these reasons, BT considered that it would be disproportionate for this review and any future reviews to impose price regulation on GEA when such constraints remained in place.

12.122 It said the introduction of such regulation could be strongly criticised as not allowing BT’s investment a “fair bet”. BT said that, had the investment failed, all risk would have been carried by BT’s investors, and hypothesised that only if the investment was successful would it be subject to regulatory intervention. It said that this would be at a time when it was expected that mass consumption of GEA would take place by large and small CPs alike in 2014, and product evolution (both technically and commercially) was still ongoing.

12.123 It said the presence and competitiveness of Virgin in major areas of the UK and particularly its strength in superfast broadband was a very important factor to consider as part of any pricing debate in this or future reviews. BT said it was severely constrained in its pricing at both the Openreach layer and retail layer by the presence of Virgin (which is vertically integrated), in addition to CPs using LLU and WLR. It said that this strongly supported the presumption against VULA price regulation. In support of the above points, BT provided a report it commissioned from Plum Consulting (‘the Plum Report’)933 which it said highlighted the benefits of Ofcom clarifying at this stage that it would not intervene prematurely to regulate fibre prices.

12.124 The Plum Report set out an overview of the development of fibre pricing freedom and resultant outcomes in terms of fibre investment and take-up. It said that it was not clear that copper would cease to provide a constraint on fibre over time and that mobile LTE would add a further constraint. It considered that cost orientation could be expected to impact investment incentives. It said however that if copper no longer constrained fibre then an ‘upgraded’ anchor product on fibre could be adopted, leaving pricing freedom for more advanced service offers. It said the alternative of a comprehensive price control would reduce flexibility and scope for service-price differentiation and that accounting for risk at the time of investment would be complex and subjective. The report concluded that signalling a price control was unlikely to be required and that alternatives (e.g. an anchor fibre product) would be more prudent if there were concerns regarding possible abuse of market power.

The FCS934

12.125 The FCS said Ofcom should consider introducing charge controls for GEA services as the network upgrades required would need regulation in the same way as WLR and LLU.


934 P.5, *FCS response to the July 2013 FAMR Consultation*,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Federation_of_Communication_Services_Ltd.pdf.
Sky

12.126 Sky did not argue for explicit price regulation of GEA. However, it was concerned with the risk of BT opportunistically introducing extra charges that did not reflect an increase in BT’s underlying costs. Sky’s first concern about throughput charging is considered here, with its concerns on migrations and minimum contract periods considered in the relevant subsections from paragraphs 12.156 and 12.221 respectively.

12.127 Sky was concerned about throughput charging whereby CPs would be charged for the amount of data used by its customers (as it said BT Wholesale currently did for IPStream). It stated that BT had previously said this was a concept it may implement at some stage and thus Sky faced considerable cost uncertainty. Sky did not consider such charging would be consistent with Ofcom’s intention for VULA to replicate features of physical access products as far as possible. Sky called on Ofcom to state whether throughput charging would be consistent with the VULA key characteristics and provide a clear indication that it would carefully assess any throughput charges against the fair and reasonable terms, conditions and charges condition.

TalkTalk

12.128 TalkTalk said that if Ofcom was unable to impose a margin squeeze protection regime that would be effective in practice then it should (as a second best) impose wholesale price caps. It said that wholesale price caps would be more pro-competitive than poorly designed margin squeeze protection.936

12.129 TalkTalk considered that the benefits of margin squeeze protection were mainly based on uncertainties that were expected to be resolved over the course of the market review period, and so said that wholesale price regulation would be a viable alternative, even in the short term. TalkTalk argued that the main advantage of wholesale price regulation was that, alongside providing some protection against margin squeeze, it would prevent BT charging excessive prices, which would be passed on to consumers.937

Vodafone

12.130 Vodafone said the fact that BT’s capital expenditure had not changed or grown between the period before NGA investment and the period of NGA investment did not support the case that pricing freedom was necessary.939 Vodafone said that the decision to allow pricing freedom was taken before the award of public funds to BT for the rollout of parts of its NGA network. It said that BT had been expected to incur the cost of large numbers of exchanges that BT had not planned to build.

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considerable costs to roll out NGA and contribute vastly to rural NGA rollout, however neither of these predictions had borne out. Given this context, Vodafone considered that NGA charge controls are likely to be necessary in the next market review period. It also considered that we should remove restrictions on the use of PIA to increase the competitive constraint exerted by mobile services (see the sub-section below on PIA for further details).

Virgin

12.131 Noting the aim of the Costing and Non-discrimination Recommendation to promote competition and foster investment in NGA, Virgin welcomed the proposal not to impose ex ante price regulation on VULA but instead adopt a light touch approach by imposing an obligation on BT to offer VULA products on the basis of fair and reasonable terms, conditions and charges, no undue discrimination and EOI.

12.132 Virgin said it continued to share the view that the next three to four years would be critical in the development of VULA and superfast broadband take-up more generally and that accordingly, it was important that innovation and investment was not stifled by an overly restrictive or cautious regulatory regime. It recognised that while there was more information available now on VULA costs and revenues compared to 2010, there remained some degree of uncertainty and given this there are inherent risks associated with setting a cost orientated charge.

12.133 Virgin considered that guidance should be provided on predatory wholesale pricing (i.e. in addition to the guidance proposed on the VULA margin).

Assessment

12.134 Our assessment of whether it would be appropriate to set specific cost-based wholesale controls on the pricing of VULA is grouped under the following three issues:

- the risk of adverse effects from price distortion caused by BT’s VULA pricing being fixed and maintained at an excessive level if we did not regulate the level of VULA prices;
- the risk of regulatory failure if we did impose a cost-based cap on VULA prices; and
- the impact on investment incentives if we did impose a cost-based cap on VULA prices.

12.135 In terms of the first issue, we recognise that, absent regulation, there is some risk of adverse effects from BT’s VULA pricing given its SMP position. That is, of the

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943 We consider the risk of adverse effects from price distortion caused by BT imposing a price squeeze in our discussion of regulation of the VULA margin in the forthcoming 2014 VULA Margin Consultation.
possibility BT has the incentive and ability to fix and maintain the price of VULA access at an excessively high level, ultimately to the detriment of consumers. However, particularly during the period covered by this market review, we consider that this is likely to be mitigated to some extent by the following competitive constraints:\footnote{944}

- in the product market definition section of the 2014 WBA Statement, we set out our conclusion that it is appropriate to define a single retail market for broadband services provided at different speeds, although we recognise that a separate superfast broadband market may emerge in the future.\footnote{945} Until any such bifurcation occurs, the retail price of standard broadband will act as a constraint on the retail prices that can be charged for retail products that use VULA;\footnote{946}

- further, if an excessive VULA charge results in retail prices for superfast broadband that are too high, then consumers are more likely to continue to use standard broadband rather than upgrade to superfast broadband (while they remain in the same retail market). This could make it more difficult for BT to recover its investment in superfast broadband, thereby acting as a similar constraint on retail prices that can be charged for services based on VULA (while there remains a single retail market for broadband services); and

- Virgin also offers superfast broadband services. Indeed, as set out above, there are currently more superfast broadband subscribers on Virgin’s network than on BT’s network, although this position is likely to change during the review period as Virgin’s network coverage is smaller than BT’s superfast broadband network (with this differential to increase over time as BT’s superfast coverage expands). Moreover, we accept that a duopoly between Virgin and BT is unlikely to be sufficient for effective retail competition, absent constraints from retailers of CGA services. Nonetheless, Virgin’s superfast broadband services are also likely to exert a constraint on the retail prices of products that use VULA, over and above the constraint from CGA identified above.

12.136 As noted in the summary of stakeholder responses, [\footnote{944}],[\footnote{945}] and [\footnote{946}] considered that there is a risk of under investment by CPs other than BT in situations where the SMP provider sets prices too high or in other ways discourages investment by competitors. Sky also raised concerns about the risk of BT opportunistically introducing extra charges that did not reflect an increase in BT’s underlying costs. In relation to these concerns, we recognise that not regulating the absolute level of VULA prices using a cost-based charge control creates scope for BT to set VULA prices that are higher than the underlying costs, even taking into account the need for a suitable return that reflects the risks BT incurred. However, the risk of BT setting VULA prices that are higher than the underlying costs is balanced against the drawbacks of regulation (which we discuss in further detail below). In addition, we consider that any adverse

\footnote{944} This constraint is more likely to operate as a result of our regulation of the VULA margin. Absent that regulation, BT could potentially increase the wholesale price of VULA without making a corresponding change in its retail prices. In such a scenario, the constraint discussed below would be weakened.

\footnote{945} The 2014 WBA Statement also states that there are factors pointing to a separate market for fibre-based products emerging at the retail level in the future. See Section 3, 2014 WBA market review (Ofcom, \textit{Review of the wholesale broadband access markets – statement}, 20 May 2014, \texttt{http://stakeholders.ofcom.org.uk/consultations/review-wba-markets/draftstatement/}).

\footnote{946} We propose to retain various regulatory requirements in relation to LLU and WBA that support competition in CGA broadband services.
12.137 With regard to Sky’s concerns about throughput charging, while BT has indicated that it might implement throughput charging at some stage, we are not aware of BT having firm plans to introduce it, and, if BT decided to introduce throughput charging, we cannot anticipate the particular terms and conditions, nor the level of charges, that would be applied. Sky’s concern is that there is a “risk of a proliferation of ‘extra’ charges that are not reflective of an increase in BT’s underlying costs”, leading to an increase in Sky’s costs. In relation to this concern, we note that under the EOI obligations set out in the general remedies (see Section 10), BT’s retail divisions would also be subject to any throughput charges and therefore would have to alter their retail prices and/or margins accordingly. Additionally, we consider that an overall difference between costs and prices of such magnitude is unlikely during the period covered by this review, as throughput charging (like the current range of VULA charges) would be subject to the competitive constraints set out above.

12.138 We have considered the risk of regulatory failure if we regulated the level of VULA prices using a cost-based wholesale charge control. As highlighted by [ ], there is now more information available on the total costs of FTTC than when we published the 2010 WLA Statement as BT has now rolled out a substantial portion of its network. However, we consider that there remains uncertainty about the level of unit costs because of uncertainty about the level and pace of VULA take-up. To illustrate, we presented in paragraphs 12.11-12.15 a number of forecasts of superfast broadband demand. Forecasts from BT, Virgin, Sky, TalkTalk and EE vary between [ ], and analysts have also produced estimates (e.g. Analysys Mason forecast take-up of 15 million in 2017).

12.139 Additionally, there is also uncertainty about how to account for the risks incurred by BT. We recognise that BT has invested substantial amounts in its fibre network and at the time those investments were made the take-up of superfast services was difficult to predict. When deciding whether and how to regulate VULA prices, it is important to take these risks into account but doing so is unlikely to be straightforward. One way to reflect these risks might be to delay explicitly regulating the price level of VULA (e.g. using a cost-based wholesale control), which may allow BT to maintain a higher price for longer.

12.140 Taking into account the risks that BT ran when it made its fibre investments is thus a particular challenge. Determining the level of cost orientated charges would be difficult and would create a material risk of regulatory failure. In particular, there is a risk that the level or structure of any cost-based charge control on the wholesale price of VULA could harm incentives for efficient investment. Even if we sought to incorporate a higher rate of return (as suggested by [ ]), there remains a risk that we err and set prices at an inappropriate level. Similarly, limits on the structure of prices could also reduce BT’s ability to experiment on price in order to increase take-up of NGA services.

12.141 We do not, as suggested by Virgin, consider it necessary to set out specific guidance on how we would assess potentially below-cost VULA prices under our ex ante framework as the principles underlying competition law, which are well developed, would be likely to form the starting point for any such assessment.
12.142 We recognise that the majority of BT’s commercial investment in its fibre network is likely to be complete by the start of the review period. Nonetheless, it is important to note that this investment was made in the light of the regulatory position previously set out by Ofcom. Adopting a consistent and predictable regulatory approach is important in order to support future investment more generally (not just in fibre). We have thus paid particular attention to the issue of consistency with observations made in the 2010 WLA Statement:

- we stated that “…we have decided not to regulate the prices of the product(s) that BT provides under its VULA obligation. We consider that this approach will give BT the flexibility to price its VULA services according to emerging information on the demand for, and supply costs of, NGA services. At the same time, the prices of these services will be constrained by the availability of current generation broadband services and by competition from services provided over cable TV network infrastructure”; and

- we also elaborated on the reasons for our approach, stating “Partly, this is because NGA services are at an early stage of development, which means that there is significant uncertainty over both the cost and revenues associated with this type of investment. Thus, determining what a cost orientation charge is would be very difficult. … we think that the flexibility to set VULA prices can promote investment by BT as it enables it to trial different pricing arrangements in the early uncertain period of NGA development. We also think that the price of VULA is likely to be constrained at this point by the ability of [other] CPs to buy CGA services from BT on regulated terms and by the services offered by Virgin Media over its cable network.”

12.143 We consider that the factors identified in 2010 generally continue to hold. NGA services remain at a relatively early stage of development with relatively limited (albeit growing) take-up of BT’s VULA product, particularly by other CPs. As discussed above, CGA broadband and services delivered over Virgin’s network continue to exert a constraint. This therefore points towards adopting a similar regulatory approach, not least in the interests of regulatory consistency and of encouraging and allowing for a fair return on investment.

12.144 Our decision not to implement a cost-based charge control on the wholesale price of VULA is closely linked to our decision to adopt an anchor pricing approach as part of the LLU WLR Charge Control, as set out in Volume 2. That is, for at least this market review period we consider that anchor pricing based on a hypothetical ongoing copper network and pricing flexibility for VULA gives the best balance in terms of protecting consumers, while providing incentives to invest in NGA capacity and take-up.

12.145 As noted in the summary of stakeholder responses, Vodafone observed that BT’s capital expenditure had not changed or grown between the period before and after it started its NGA investment. We do not consider that this observation is relevant to our decision not to set a cost-based charge control for the wholesale price of VULA.

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947 BT, BT speeds up fibre plans once again, 1 November 2012, www.btplc.com/News/Articles/Showarticle.cfm?ArticleID=B95CCF6C-F125-4ABF-A78D-82476B31A07C.
949 Paragraph 8.127, Ibid.
In any event, Vodafone did not advocate the introduction of such a charge control during this current market review period.

12.146 We note that, in response to the 2012 FAMR Call for Inputs, Tesco raised the issue of standalone GEA, i.e. where, rather than being offered as an overlay product provided with WLR or MPF, FTTC-GEA could be bought on a standalone basis (sometimes referred to as ‘naked fibre’). While we cannot fetter our discretion, we set out here considerations we currently think are likely to be relevant to compliance with that requirement. We first consider that we are unlikely to want the price of any standalone FTTC GEA product to undermine BT’s incentive to roll-out and promote take-up of fibre. Second, we consider that since GEA over FTTC is currently an overlay service (i.e. it can only be bought in combination with WLR or MPF) our initial view is that the charges for this service should not recover any significant common costs. However, should GEA be made available on a standalone basis, our further initial view is that the common costs being recovered via the WLR or MPF charge should be transferred to this new standalone service. Our aim would likely be for there to be the same amount of common costs recovered per line, i.e. from each of MPF, WLR, GEA over FTTP and standalone GEA over FTTC.

Conclusion on general pricing approach for VULA for this market review

12.147 We recognise that, if wholesale charges are not subject to cost-based price controls and are excessive, then the potential consumer benefits from NGA could be reduced. This could also be inconsistent with the promotion of efficiency and of sustainable competition. However, we have weighed this risk against the risks of regulatory failure and the potential impact on investment were we to regulate wholesale VULA prices using a cost-based charge control. Given the importance of taking into account the risks incurred by BT when it invested in fibre and given the importance of adopting a consistent regulatory position, we have concerns about the potential negative impacts of regulating the level of wholesale VULA prices using a cost-based charge control at this time.

12.148 Our conclusion is that the possibility of such an intervention inhibiting investment poses the bigger risk to the promotion of efficiency and of sustainable competition, and risks failing appropriately to take account of the extent of BT’s investment in its NGA network. We consider that, accordingly, it is in consumers’ interests and would confer the greatest possible benefit on end-users to allow BT to retain pricing flexibility on NGA prices for this market review period (particularly given the constraints that we identify on BT’s retail pricing, which we consider are likely to limit any adverse effects of doing so).

12.149 We therefore are continuing to allow BT pricing flexibility on VULA prices in general, including on the absolute level of prices, geographic variations, changes over time, and some flexibility on tiered pricing (subject to the views on the latter set out in the 2009 Superfast Broadband Statement).950 This flexibility would be within the constraints imposed by the fair and reasonable terms, conditions and charges obligation that we set out in Section 10 and subject to the EOI obligations we have decided to impose. While we are not imposing an explicit cost-based wholesale

950 We discuss the factors that would affect our view on whether particular tiered pricing discounts are in consumers’ interests in paragraphs 8.28-8.32, Ofcom, Delivering super-fast broadband in the UK, 3 March 2009, http://stakeholders.ofcom.org.uk/binaries/consultations/nga_future_broadband/statement/statement.pdf.
charge control on BT, there are alternative forms of *ex ante* pricing obligations which can complement this position, such as regulation of the VULA margin.\(^{951}\)

12.150 We consider that the above arguments apply to VULA charges generally. Nevertheless, while we are allowing BT pricing flexibility on the level of VULA charges in general, we have also considered whether there are specific VULA-related charges in respect of which a relevant risk of price distortion arises and which could be addressed without undue effects on investment incentives, consistently with the promotion of efficiency and of sustainable competition, and with serving end-users’ interests. Having done so, we have introduced a constraint on the GEA migration charge, which we discuss from paragraph 12.156 below, as well as restrictions on the length of the contract BT can require on migrations, which we discuss from paragraph 12.221 below.

**Future regulation of VULA prices**

12.151 In the interests of regulatory certainty and consistency, we also think it appropriate to consider possible issues in the future regulation of VULA prices. We note first that it is useful to distinguish between the decision whether to regulate the level of NGA prices and the details of that regulation (e.g. the level and nature of any cost-based charge control). We anticipate that we will revisit the former issue in our next market review – indeed we considered it both in this review and in the 2010 WLA Review. Any pricing obligation we might impose beyond the present review period will be set as a result of future market reviews in light of the circumstances prevailing at the time. Although we cannot fetter our future discretion, factors that we may consider include the presence of a constraint from copper (or other services), the risk of regulatory failure, the returns that BT has made, and the extent to which superfast broadband has matured (for example, whether demand, technology and/or costs are more certain but also whether there remain future potential investments (e.g. speed upgrades)).

12.152 We consider it is appropriate to set out this advice now in the interests of future certainty, and consider that doing so is consistent with the Costing and Non-discrimination Recommendation. For example, we note in Recital 4 that *“In order to provide the necessary predictability over a longer time period, i.e. beyond the lifetime of an individual market review, NRAs should clarify in measures that impose regulatory remedies under Regulatory Framework as far as possible how foreseeable changes in market circumstances might affect the relevant remedies”*. \(^{951}\)

12.153 In response to BT’s concern about Ofcom prematurely regulating fibre pricing, we can confirm that, in line with paragraph 12.150, we would only introduce explicit cost-based wholesale price regulation (such as a charge control) if and when our market review analysis confirmed that it was appropriate to do so. As noted in the same paragraph, we agree with the Plum Report that an important factor in making this assessment could include whether there remains a constraint from copper (or another technology) and note that under the Costing and Non-discrimination Recommendation this is a necessary feature in order to allow pricing flexibility, as discussed in paragraph 12.255.

\(^{951}\) As set out above, we intend to publish shortly a further consultation on our approach to the VULA margin.
12.154 We also note that if we did find a cost-based wholesale pricing obligation necessary, there are a range of different types of obligations and that our consideration could well include forms of pricing control suggested in the Plum Report, such as an anchor fibre price (as suggested in Recital 56 of the Costing and Non-discrimination Recommendation), combined with flexibility on more advanced service offers.

GEA Switching

12.155 As we have set out above, we consider it appropriate to provide BT with flexibility over how it prices VULA. However, we now consider the case for intervening in respect of certain aspects of the terms, conditions and charges imposed when an existing fibre customer switches from one CP to another. We first consider the GEA migration charge952 and, second, from paragraph 12.221 the contract period for GEA connections and migrations.

GEA Migration Charge

Position in 2010 WLA Statement

12.156 In the 2010 WLA Statement we recognised the concerns raised by some stakeholders in respect of the pricing of ancillary services, most specifically in relation to the pricing of migrations. We noted that we would be concerned where ancillary services were consumed by other CPs but not BT’s own downstream divisions and in particular if the pricing of migrations resulted in unnecessarily high switching costs between CPs or artificially favoured BT’s downstream operations. We stated that we would expect to take further action where there was evidence that BT was not acting in accordance with its general obligation to set charges on a fair and reasonable basis, or was discriminating when setting these or other ancillary charges.

Proposals in the July 2013 FAMR Consultation

12.157 In the July 2013 FAMR Consultation we proposed to control the level of the GEA migration charge for both FTTC and FTTP. We proposed that a charge control was the most appropriate means for doing this and considered that it should be no higher than a figure in the range of £10 to £15, compared to the current charge of £50.

Responses to July 2013 FAMR Consultation

12.158 In the July 2013 FAMR Consultation, we asked the following in relation to the GEA migration charge, the responses to which are detailed below.

| 11.3 | Do you agree that the charge for a GEA migration should be subject to a charge control at some point in the range of £10 to £15? If so, please indicate where in that range the charge should be, supported by evidence. If not, please state the reasons why. |

952 This charge is incurred when an existing GEA customer wishes to move from their current CP to another CP while retaining the GEA service. Hereafter we refer to this as the ‘GEA migration charge,’ which means the same as ‘VULA migration charge.’
12.159 [38] agreed, considering this a key requirement to ensure that there was competition in switching customers between various fibre based products and to avoid any competitive distortions. On the level of the charge, [38] considered that, where there was such dominance, prices should be as close to LRIC as possible, which would mean a charge towards £10 rather than £15. It also considered (referring to the “O2 ‘flip-flopping’ dispute”) that simply complying with the charge control would not automatically be fair and reasonable (noting we had proposed not to apply the fair and reasonable charges condition to the GEA migration charge) and therefore questioned why Ofcom did not think it necessary to bolster the charge control with such additional requirements.

**BT**

12.160 BT considered Ofcom should rethink this proposal, which in its view was premature. It said that at this stage in the development of fibre services, Ofcom should be focusing on supporting increased take-up of fibre rather than measures which would simply increase the churn of existing customers between providers.954

12.161 It said it agreed with the principle that it was appropriate to set a low ‘cost-based’ price for transfers/migrations in a mature market, but that a different approach was required in an immature market. It said that to support a large scale and risky investment Openreach needed to incentivise CPs to create new incremental demand for NGA services. It said that the proposal may in fact create an incentive which increased churn in the short to medium term without stimulating overall market growth and take-up, both key drivers which could bring down unit costs and benefit all fibre customers.

12.162 Should Ofcom choose to implement the proposal, BT believed the new charge should be set on the basis of FAC, which would mean a charge at the top end of the range that Ofcom proposes. It said that a charge below this level would be likely to signal a high risk that Ofcom will act to reduce first mover advantage in other nascent markets in the future.955

12.163 Following its response to the July 2013 FAMR Consultation, BT advised that implementation of this solution (along with the reduction in the contract period following a migration) would be assisted if we set a date from which the change must be made following publication of the Statement (even if that is “from the end of the month following the publication of the Statement”), rather than the proposed “within 28 days of the Statement”.956

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953 [38]
954 Paragraph 257, [BT response to the July 2013 FAMR Consultation](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf).
955 Paragraphs 257-258, [BT response to the July 2013 FAMR Consultation](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf).
956 Teleconference between Ofcom and Openreach, 18 November 2013.
EE

12.164 EE welcomed the proposal to impose a charge control on GEA migration. It considered that, in the absence of robust cost data, the appropriate benchmark was the IPStream or Wholesale Broadband Connect (FTTC) migration charge, noting both were set at £11. It further noted the migration charge between CPs that buy VULA from BT Wholesale was already £11 and that, as the process was identical to a GEA migration, the GEA migration charge should be set at £11. EE also considered the same charge should apply for a wires-only GEA migration, as the migration activities are the same for a standard GEA migration.

The FCS

12.165 The FCS said it supported the charge control and the reduction from £50 to £10 or £15 in principle but welcomed further research/opinion on whether the proposed rate was “commercially correct”, particularly given the comparable WLR migration cost of around £3.

Sky

12.166 Sky said it was positive that Ofcom proposed to regulate the GEA migration charge and adopt an incremental costs approach in setting the price. It agreed with the proposal not to rely on BT’s cost data and use comparators instead, as well as to ignore systems development and sales costs. However, Sky considered the £10-15 range to be too high and that Ofcom did not provide sufficient justification for the range.

12.167 Sky stated that the migration process required no physical intervention, was straightforward, completely automated, and was undertaken within seconds. It stated that Openreach simply changed a configuration setting on its exchange equipment with the effect of routing the data traffic for the specific consumer onto the new provider’s network. It argued the cost should reflect the fact that no physical intervention is required.

12.168 Sky argued the range proposed by Ofcom was above the chosen benchmarks of WLR and IPStream. Sky said it did not believe that physical network re-configuration/re-routing work was required for a GEA migration and therefore it should not result in higher costs than WLR. It also noted Ofcom’s estimate of WLR transfer costs was based on DLRIC which includes an allocation of common costs and that, as the process is largely automated, the majority of its costs would not be incremental. It considered that, based on an incremental costs-only approach, the GEA migration charge should be significantly lower than Ofcom’s estimate of the WLR transfer cost. While agreeing WLR was a reasonable proxy, Sky considered that this should represent the maximum level of the GEA migration charge as it

included an element of common costs. Therefore the migration charge should be set below the WLR transfer cost.

12.169 Sky said caution should be exercised in relying on the IPStream migration charge as a benchmark, as it had been maintained at £11 since 2004 (subject to a charge control since 2011) but Sky would have expected the costs of providing this service to have reduced over time given anticipated efficiency savings.

**TalkTalk**\(^960\)

12.170 TalkTalk supported the proposal on the pricing of GEA migrations. It stated that there was no valid economic case for setting a migration charge in excess of LRIC, noting that, in other industries, switching costs had in some cases resulted in switching prices below LRIC.

12.171 TalkTalk further considered that the presence of any migration charges at all would have distortionary effects on superfast broadband as they would reduce competitive tension between downstream providers, consumers would experience increased switching costs and there would be an asymmetry between BT’s retail divisions and other providers when migration charges were set in excess of LRIC. In light of this, TalkTalk expressed a preference for the GEA migration charge to be set to zero with migration costs recovered instead through monthly charges.\(^961\) It considered this would maximise the overall efficiency of the market, with increased price competition more than offsetting any loss of efficiency from setting migration charges below costs.

**Virgin**\(^962\)

12.172 Virgin said there was a need to be cautious in imposing more intrusive regulation on GEA when the costs of provision of the service as a whole had not been examined in detail by Ofcom. It said that to concentrate on a particular service and impose intrusive pricing regulation such as a charge control may have unintended consequences in relation to overall cost recovery. Virgin was particularly concerned that the proposed approach could undermine investment and innovation in superfast broadband, which would impede not only BT but also other infrastructure providers.

**Vodafone**\(^963\)

12.173 Vodafone agreed that Ofcom had correctly identified that the present GEA migration options were a barrier to consumer switching and agreed with the proposals that Ofcom made to remedy this.

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961 In support of this, TalkTalk provided a report by AlixPartners in an annex to its response to the July 2013 FAMR Consultation.


Analysis and stakeholder responses

12.174 The GEA migration charge is currently £50.\textsuperscript{964} BT had announced to industry that it was currently reviewing this charge, but has made no further public statements we are aware of regarding this review.

12.175 We consider that there is some tension between giving BT pricing flexibility over the level of VULA charges (noting we have set out the reasons for doing so from paragraph 12.134), which enables it to set the price of a GEA migration, and our preference for low switching costs, which are in consumers’ interests as they help strengthen retail competition which tends to drive down prices and drive up quality.\textsuperscript{965}

12.176 We have considered whether there is a relevant risk of adverse effects from price distortion arising from the GEA migration charge being fixed and maintained at an excessively high level. Our starting point for this assessment is BT’s SMP. As the dominant provider, there is a risk that BT will use its market power to impede retail competition to benefit its downstream business. The incentive to do so is particularly strong where there is a migration charge which is paid mainly by other CP’s and not BT’s own retail divisions. This is particularly relevant to VULA given that BT’s retail divisions currently account for 78% of VULA connections.\textsuperscript{966} We also note that BT forecasts that BT’s retail divisions will account for $[\times\%]$ of superfast broadband subscribers on its network in 2016/17.\textsuperscript{967}

12.177 Given that we anticipate that a significant proportion of fibre retail customers over the review period will be customers of BT’s retail divisions, we consider that BT has a strong incentive to maintain GEA migration charges at an excessive level. Given this incentive, we have considered whether there is evidence to suggest that the current GEA migration charge is at an excessive level.

GEA migration cost information

12.178 We explored with BT what information is available on the costs of GEA migration to assess the reasonableness of the current charge. While BT had little direct costing information on the GEA migration due to the low volumes, it estimated the costs in the following way:

“We have estimated the costs for CP to CP GEA migration based upon the NGA provision costs captured within BT’s RFS. We have only focused upon the elements of the NGA provision cost that would relate to CP to CP migration. This is consistent with the treatment of WLR Transfer and WLR connection in BT’s RFS, whereby both

\textsuperscript{964} This is the ‘CP-CP GEA Migration - same product/premise’ in Openreach’s price list, which is the same for FTTP and FTTC. For FTTC see: \url{www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=yzh%2FT4a3aG3hVgsB2ZyfljHxztSuq3px%2FWFtqATP2kPRZ6rNZujnCg99NblKJZPD9hXymjxH6wr%0ACQm97GZMyQ%3D%3D}.

\textsuperscript{965} That low switching costs are in consumers’ interests is consistent with the approach to switching we have taken in our strategic review of switching, e.g. Ofcom, \textit{Strategic review of consumer switching: A consultation on switching processes in the UK communications sector}, 10 September 2010, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/consumer-switching/summary/switching.pdf}.

\textsuperscript{966} BT, \textit{Results for the Fourth Quarter and Year to 31 March 2014}, 8 May 2014 \url{http://www.btplc.com/News/ResultsPDF/q414-release.pdf}.

\textsuperscript{967} BT response to question 1.1 of the s.135 notice of 12 February 2014.
products pick up the same cost for the same network elements. We have used BT’s 2011/12 RFS as the latest available data. Using this data:

The cost of system recording only change of end-user ownership between CP1 and another CP2 is £[£], based upon the unit cost of systems attributed to NGA provision;

The cost of Service Management Centre involvement in NGA provision, and used as a proxy for likely involvement in CP to CP migration activity, is estimated as the unit cost of £[£]; and

The cost of Sales and Product Management pertinent to NGA provision is £[£] per unit. Again, we would use this as an estimate of the cost for CP to CP migration.

Due to the current low volumes of CP-CP GEA migrations, Openreach is not at this point able to reliably predict the level of manual intervention required on a CP-CP GEA migration and hence have made the estimate given above based on other similar transactions. Therefore we estimate the fully allocated cost to be circa £[£] per unit based on the 2011/12 RFS”.968

12.179 We note that this estimate of costs is lower than the current charge of £50. Additionally, we are concerned that the methodology BT has used may not be robust for determining an appropriate cost for GEA migrations. Indeed, BT stated that it did not have detailed cost information for GEA migration in the RFS and stressed that current low migration volumes made it difficult to estimate the amount of manual intervention that is required.969 In particular, we are concerned that these low volumes may cause artificial distortions to BT’s cost estimates. We consider it likely that, as volumes grow compared to 2011/12, the costs estimated through this methodology may fall, potentially significantly.

12.180 This is particularly likely to be the case for the unit costs of systems, which are likely to be largely fixed with regard to volumes. BT calculated the £[£] cost of development and systems costs by taking development and computing costs attributed to NGA connections £[£] and dividing by the 2011/12 NGA connection volumes [£].970 A consequence of BT’s approach is that estimated costs per unit are likely to be particularly high in the early years due to low volumes. Given the forecast increases in VULA take-up detailed above, it seems plausible that, under BT’s approach, per unit estimates of development and systems cost estimates would be substantially lower in the future than £[£].971 Indeed, it may be more reasonable to spread the systems costs involved with GEA over the total expected volumes that will

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968 BT response to question 2.2 of the s.135 notice of 10 January 2013. We note that, despite having the opportunity to do so as part of its response to the 2013 FAMR Consultation, BT did not chose to provide an update of the detailed breakdown.

969 Ibid.

970 BT follow up response to the s.135 notice of 10 January 2013, received 27 February 2013.

971 Indeed BT’s internal forecasts suggest that superfast broadband connections will grow by [£] between 2014/15 and 2015/16 and by [£] by between 2015/16 and 2016/17. This is substantially larger than the [£] figure BT used in its calculation of GEA-to-GEA migration costs. Forecasts taken from BT response to question 1.1 of the s.135 notice of 12 February 2014.
use that system during its lifetime. This approach would be likely to result in materially lower system costs in the early years compared to BT’s approach.

12.181 We consider that GEA migration charges should be reflective of LRIC\textsuperscript{972} for the following reasons:

- setting migration charges on an incremental basis, rather than including a contribution to fixed and common costs, is likely to reduce switching costs. Lower switching costs are generally likely to be in consumers’ interests since they help strengthen retail competition; and

- GEA (like MPF, WLR and SMPF) is an input that can be used in the provision of voice and data services to final consumers. Setting migration charges for all these inputs on an incremental basis means that differences in charges reflect differences in incremental costs. This creates incentives that support an efficient choice between these different inputs.

12.182 For these reasons we disagree with BT that the price should be on a FAC basis. We also disagree with TalkTalk that there should be no charge for migration, with any associated costs being recovered through the monthly charges. TalkTalk’s proposal would mean that the (zero) price of GEA migrations did not reflect the costs associated with that service. It would thus distort the price signals sent to CPs, and ultimately consumers, with respect to migration. As a result, economic efficiency is likely to be reduced. We believe that this would be to the detriment of consumers who we note could face other GEA charges above what they would be if the migration charges were set based on incremental costs.

12.183 Where we consider costs on an incremental basis then this is likely to result in a significantly lower figure than BT’s estimate. Accordingly, we consider that the current charge of £50 per GEA migration is likely to be well in excess of long run incremental costs.

12.184 While the costs of other forms of migration, which we discuss from paragraph 12.198, are imperfect benchmarks for the cost of GEA migration, they are all substantially lower than the current £50 GEA migration charge. Each of these factors informs our conclusion that there is in respect of that charge a relevant risk of adverse effects arising from price distortion and, in particular, of BT fixing and maintaining the charge at an excessively high level with the effect of hindering switching and competition, which would be against consumers’ interests.

\textit{Decision to constrain the price of GEA migrations}

12.185 Accordingly, we considered two options – to do nothing and retain pricing flexibility including for migrations, or to control the GEA migration charge in some way.

12.186 We consider that doing nothing for this review period, thereby leaving BT free to maintain the GEA migration charge at £50 or another level, is unlikely to be in consumers’ interests because:

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\textsuperscript{972} Including a reasonable rate of return (the cost of capital).
• the migration charge is currently likely to be significantly higher than cost and unnecessarily high switching charges may hinder competition which would be against consumers’ interests;

• we had set out in the 2010 WLA Statement that we would expect to take further action where there was evidence that BT was not acting in accordance with its general obligation to set charges on a fair and reasonable basis.\(^{973}\) Controlling GEA migration charges is therefore consistent with our previous regulatory position;

• reducing this migration charge should not materially weaken BT’s incentives to deploy and promote VULA, nor its ability to recover its investments, because BT would still have flexibility over the level of rental, connection and other VULA charges; and

• while we understand that current switching volumes are low, and therefore the immediate impact of the charge on switching may be low in absolute terms, we would anticipate that the number of customers wanting to switch will naturally increase over the review period in line with projections for overall VULA volumes. On this basis, we consider it appropriate and proportionate to regulate this charge now rather than waiting until there are material volumes of customers wanting to switch.

12.187 Our conclusion, therefore, is that some form of control over the GEA migration charge is appropriate. A price that is reflective of relevant costs is more likely to be suitable for the purpose of promoting competition. A control designed to secure this should provide price signals that allow a CP to retain customers when it offers a more attractive service (in terms of cost or quality) but facilitate rivals winning customers when it offers a less attractive service. That is, rival CPs will not be discouraged by high migration charges when competing at the retail level. This should ultimately benefit consumers, and each of these factors is also more likely in our view to confer the greatest possible benefits on end-users.

12.188 Given this, we consider that the impact on BT’s investment of controlling the level of GEA migration charges is likely to be different to the impact of controlling the level of VULA rental and connection charges.

12.189 In contrast to rental and connection charges, GEA migrations from one CP to another do not directly affect the total volumes of VULA lines. We therefore disagree with Virgin that a control of GEA migration charges could undermine investment and innovation in superfast broadband as we do not consider that changes in the number of migrations would have a major impact on BT’s investment incentives on VULA, especially as Openreach operates at arm’s length from BT’s retail divisions. We do however recognise that there could be some small indirect effects on investment, in that CPs (including BT’s retail divisions) may be less inclined to encourage consumers to take up services that use VULA if it is easier for those consumers to switch to another CP in the future. We consider that the benefits to switching outweigh this small potential indirect impact on investment. Moreover, subject to constraints, for example from CGA services, BT would retain the flexibility to amend

the level of other VULA charges during the review period. In other words, it may be able to rebalance VULA charges with some charges rising and others falling (currently the revenue from the migration charge is negligible).

12.190 While we agree with BT that consumer switching between rival CPs in and of itself does not grow the overall demand for superfast broadband, we consider that it is a key factor in facilitating competition in the market by allowing rival CPs to grow. Given this, we consider that facilitating consumer switching by ensuring GEA migrations reflect incremental costs confers the greatest possible benefit on end-users. Accordingly, we remain of the view that, in light of the level at which BT has chosen to set this charge, doing nothing for this review period is unlikely to be in consumers’ interests for the reasons set out in paragraph 12.186.

12.191 We have also considered the risk of regulatory failure, namely that any regulatory constraint on GEA migration charges is set at an inappropriate level. We recognise that this is a risk given the imperfect information available on the cost of migration. However, the current migration charge of £50 is likely to be well in excess of cost. Given the high level of current (non-controlled) charges, we consider that any adverse effects from errors in setting regulated charges are likely to be smaller than adverse effects from leaving these charges uncontrolled, particularly given the potential competition benefits of lower charges.

12.192 On an overall assessment, therefore, we consider that the benefits to switching are likely to be more important than the possible indirect effects identified. We have therefore decided to ensure that the GEA migration charge better reflects costs.

Form of any price constraint

12.193 We now discuss the form of price constraint on GEA migration charges. We have considered imposing a Basis of charges obligation and a charge control.

12.194 On the basis that there is very limited direct costing information on the GEA migration, we consider that a Basis of charges obligation would create considerable uncertainty for BT and other CPs. While we could provide guidance on the conceptual approach that BT should adopt when setting these charges (e.g. that they should reflect the LRIC of migration), there is likely to be considerable uncertainty about what this translates to in practice. On this basis, we do not consider that a Basis of charges obligation would be effective in addressing the risk of adverse effects from excessive pricing by BT along the lines identified above.

12.195 We have therefore decided to impose a charge control, which will remove, or at least mitigate, that uncertainty.

12.196 As set out in paragraph 12.181, we consider that a charge control on GEA migration should reflect the incremental cost of this service. However, as discussed above, we only have limited cost data – we are not in a position to accurately estimate LRIC. Accordingly, at this time, we have focused on reducing the GEA migration charge from its high current level (£50) to a level in the vicinity of LRIC. In future reviews, greater data may be available and it may be possible to further refine the level of any charge control (assuming it remained appropriate). For the same reason, we are not adjusting the control over the market review period in nominal terms. Nor do we propose a glide path as, due to the small volumes, an immediate cut is unlikely to cause a significant disruption to BT; moreover, a rapid cut is likely to benefit
customers (particularly given we consider the current charge is likely to be well in excess of costs) as it would not defer the benefits to consumers we discussed above.

12.197 In response to [X] argument that a fair and reasonable charges obligation should be applied alongside the charge control, we note that in putting in place a charge control we are aiming to provide as much certainty as possible for stakeholders. Noting that a GEA migration is a single process with a single charge, we do not have evidence of a risk that a charge control obligation alone is insufficient to ensure the intention of setting the GEA migration charge at £11 is fulfilled (e.g. that the charge control could be gamed). Therefore, in light of the charge control, we have decided not to apply the fair and reasonable charges obligation to the GEA migration charge.

Benchmarking costs using comparable services

12.198 In order to determine the level at which we should set the charge, we have considered the nature of GEA migrations and then considered the costs of other migrations that appear to have similar characteristics, noting that EE and Sky were supportive of this benchmarking approach. BT summarised what is involved with a GEA migration, when there are no complications, as follows:

“…the primary activity involved is to record a change of end-user ownership from CP1 to CP2 on Openreach systems and a network re-configuration and re-routing in systems reference data. If there are no systems, engineering or data errors we would expect this to be typical of the full extent of the activities involved”.

12.199 However, BT also emphasised to us that manual intervention may be required in some cases, for example:

“This could be triggered by CP and/or Openreach network reconfiguration and may result in individual transaction errors with the EMP system or generate engineering investigations/visits to resolve faults caused by end-user/CP engineer alterations to wiring/connectivity between the VDSL modem and CP router, and the configuration changes required on the end-users network devices (e.g. PC/tablet/smartphone)”.

12.200 In summary therefore, the GEA migration involves a records change and a network reconfiguration/rerouting, except in some cases where manual intervention may also be required. We note that the records data changes are made by the CPs in BT’s system, rather than by BT itself, while the network re-configuration/re-routing is handled by BT’s systems without manual involvement (‘soft-switching’). Therefore, in a migration with no complications, no manual intervention is required from BT personnel. We would therefore expect BT’s incremental costs for such a migration to be very low, for example significantly lower than migrations between LLU providers

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974 BT response to question 1 of the s.135 notice of 10 January 2013.
975 Ibid.
976 Openreach’s GEA-FTTC Product Description documentation (paragraph 3.6.4) states that “GEA over FTTC transfers between CPs do not require any physical jumpering activity at the local street cabinet or an engineer visit to the end-user’s premises”. GEA-FTTC Product Description (requires login), www.openreach.co.uk/orpg/customerzone/products/super-fastfibreaccess/fibretothecabinet/description/downloads/FTTC%20Product%20Description%20Issue%209.pdf.
where manual intervention at the main distribution frame (‘MDF’) is required. In fact, if we strip out the £\[\times\] cost of ‘MDF Hardware Jumpering’ in the MPF-MPF migration, we end up with a very low cost of £\[\times\] that covers the remainder of the activity in a migration.\(^\text{977}\)

12.201 We have also considered whether there are more similar migration processes that do not involve physical activity which could be used as benchmarks. Taking into account EE’s comparison with WBC-FTTC migrations, we now consider that there are three similar migration processes that do not involve physical intervention.

12.202 The first is WLR Transfer, which primarily involves a change of records involving Openreach systems. The charge for this service is controlled by a separate charge control which caps this charge at £3.39, well below 2010/2011 DLRIC, but will rise to £8.61 by the end of this review period as set out in Section 16 (see Volume 2 for more details).

12.203 While we consider WLR Transfer to be a reasonable proxy for benchmarking GEA migration costs, as it gives an indication of the level of costs involved in records updates on Openreach systems, the process does not involve network re-configuration/re-routing\(^\text{978}\) which is an additional element that must be factored in when assessing the level of the GEA migration.

12.204 On the basis that the WLR Transfer charge (which we consider follows the approach of reflecting incremental costs) is set to increase from £3.39 to £8.61, and that the GEA migration includes the additional elements noted above, we do not agree with Sky that the WLR Transfer charge should represent the maximum level of the GEA migration charge.

12.205 We have also considered IPStream migration and now WBC-FTTC migration (at the suggestion of EE) in our benchmarking analysis. While we recognise that both of the migration services are performed by BT Wholesale rather than Openreach, we note that they involve both a change of records and network re-configuration/re-routing within system databases.

12.206 Both charges are currently £11. The IPStream migration charge had been maintained at this level since 2004 following Ofcom’s assessment of an efficient level of costs for such a migration. In the 2011 WBA Charge Control Statement we imposed an RPI-0% sub-cap on this migration charge. The WBC-FTTC migration charge had been set by BT Wholesale at £11 since 2011. We acknowledge Sky’s caution not to over-rely on the IPStream migration charge as a benchmark due to the anticipated efficiency savings since 2004. We understand that the IPStream migration charge and WBC-FTTC migration charge have been falling in real terms as part of efficiency changes, however in its response Sky did not offer an estimate of the scale of such efficiency savings. We would like to point out that the underlying nature of the benchmarking approach is such that it is not exact. Given the uncertainty around the true costs of a GEA migration we consider that implementing efficiency adjustments as suggested by Sky will not improve the accuracy of our conclusions.

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\(^\text{977}\) 2011/12 LRIC data produced by BT in response to the 1st s.135 request to BT for the purposes of the 2013 LLU WLR Consultation.

\(^\text{978}\) Sky said that a GEA migration does not involve physical network re-configuration/re-routing. We note, however, that it still does require network re-configuration/re-routing in systems databases (which is handled by BT’s systems without manual intervention, i.e. ‘soft-switching’).
12.207 Overall, based on the analysis above and the stakeholder responses to the July 2013 FAMR Consultation, we consider the IPStream migration charge and WBC-FTTC migration charge to be appropriate proxies for estimating the costs of GEA migration.

12.208 In taking this view, we have also considered whether the level of the charge control should change over the period covered by this review. In general we include a factor to reflect BT’s increasing efficiency over time\(^{979}\) and note that the cost of manual intervention (where required) may also change over time, e.g. due to rising labour costs. However, given the limited data available to us to estimate such a factor and in light of the counterbalancing effects of such factors on the cost of GEA migrations over time, we consider the control should be fixed in nominal terms.

12.209 Finally, we do not see any significant adverse effects for consumers from implementing BT’s request for the requirement to come into force from the end of the month following the publication of the Statement and therefore have amended the direction we have made under the relevant condition to reflect this.

**Conclusion on GEA migration charge**

12.210 We have decided to control the level of the GEA migration charge, for both FTTC and FTTP. For the reasons set out in paragraphs 12.196, we are not in a position to accurately estimate LRIC. We are therefore relying on appropriate benchmarks and consider the IPStream and WBC-FTTC migration charges to be appropriate proxies for the incremental costs of GEA migration. We consider that a charge control is the most appropriate means for doing this and that the charge must be no higher than £11 (with no nominal increase in the charge over this review period), compared to the current charge of £50. If BT replaces the GEA services, the replacement service(s) would also be within the scope of the control.

12.211 We consider that such an intervention is consistent with our general approach to VULA pricing in that it does not, for the reasons set out, give rise to undue effects on investment incentives and is consistent with the promotion of efficiency and of sustainable competition and with conferring benefits on end-users.

12.212 As the volumes for this service are currently low and we have not regulated this charge before, we have decided to make a one-off adjustment for this charge. BT must implement from the final working day of the month following the month in which this Statement is published.

12.213 Further, we note that the cost accounting obligations set out in Section 10 apply to VULA. Going forward, it is important that VULA is separately identified in BT’s cost allocation, to ensure that common costs are correctly allocated across the suite of regulated services which are subject to pricing obligations. However, BT would not be publicly required to report these.

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\(^{979}\) As we have done for the LLU and WLR charge controls (see Volume 2). We note that the IPStream migration charge is now subject to a more sophisticated sub-cap which reflects such considerations. However, for the reasons given in this paragraph, we do not consider such an approach appropriate for the GEA migration charge in this review period.
Legal tests

12.214 This sub-section sets out the legal tests for imposing a charge control on GEA migrations. For the reasons set out below, we are satisfied that the control meets the various tests set out in the CA03.

12.215 Section 87(9) of the CA03 authorises Ofcom to set SMP services conditions imposing on the dominant provider such price controls as Ofcom may direct in relation to matters connected with the provision of network access to the relevant network, or with the availability of relevant facilities provided the conditions about network access pricing set out in section 88 are satisfied.

12.216 On the basis of our arguments set out above, we consider that the charge control satisfies the requirements of section 88(1). Our analysis indicates that the level of the current charge is likely to be excessive and that there are adverse consequences for end-users as a result. In particular, for the reasons put forward, we consider that the migration charges should reflect relevant costs, in order to promote efficiency by sending efficient price signals, and that higher migration costs will tend to result in higher switching costs which will weaken competition, which tends to drive prices up and quality down.

12.217 In our view, the charge control is appropriate for promoting efficiency and sustainable competition, and conferring the greatest possible benefits on end-users by reducing switching costs. We consider that the benefits of reducing switching costs outweigh the general arguments we set out earlier in paragraphs 12.134 to 12.150 above for giving BT price flexibility over the level of VULA charges, for the reasons we have set out in relevant paragraphs above.

12.218 The extent of BT’s investment has been taken into account as required by section 88(2), again on the basis put forward above. In the absence of robust direct cost information relating to the GEA migration, we have set the charge control by reference, in particular, to the likely work and costs involved in migrations and to benchmarking of the costs of comparable services. We have set out why we do not consider the control would fail appropriately to reflect BT’s investment and would not have a dis-incentivising effect on investment.

12.219 We also consider that the charge control meets the criteria set out in section 47(2) of the CA03. The condition is:

- objectively justifiable, in that BT has (or there is a risk BT has) fixed and maintained the relevant price at an excessively high level and, owing to its SMP in the market, it is unlikely to be incentivised to set migration charges at the competitive level;

- not unduly discriminatory, in that the charge control does not discriminate unduly against BT as it is the only CP to hold SMP in the relevant market (in the UK excluding the Hull Area) and the control seeks to address that market position, including BT’s ability and incentive to set excessive charges for services falling within the control;

- proportionate, in that the charge control is focused on ensuring that there are reasonable prices for the migration service while, to the extent possible given the limited data, being set so as to be consistent with allowing BT to recover its
investment, including earning a reasonable rate of return (the cost of capital). We therefore consider that the charge control is:

- appropriate to achieve the aim of addressing BT’s ability and incentive to charge an excessive price for GEA migrations;
- necessary, in that it does not, in our view, go beyond what is required to achieve the aim of addressing BT’s ability and incentive to charge excessive prices for this service; and
- is such that it does not, in our view, produce adverse effects that are disproportionate to the aim pursued; and

- transparent, in that the aims and effects of the charge control are clear and have been drafted so as to secure maximum transparency.

12.220 Further, for all the reasons set out above, we consider that the imposition of a charge control would further the interests of citizens and further the interests of consumers in relevant markets by the promotion of competition, in line with our principal duty under section 3 of the CA03. We also consider that, in line with section 4 of the CA03, the charge control and condition would promote competition in relation to the provision of electronic communications networks. It would similarly encourage the provision of network access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers, while being consistent with the purpose of securing efficient investment and innovation.

12 month minimum contract term

Policy proposals as set out in the July 2013 FAMR Consultation

12.221 In the 2013 FAMR Consultation we proposed requiring BT to have a minimum contract term of no more than one month following a GEA migration to limit BT’s flexibility for migrations. We considered but proposed not to limit BT’s flexibility to have a 12 month initial minimum contract term for new connections.

Stakeholder responses to the July 2013 FAMR Consultation

11.4 Do you agree with our proposal that BT offer a minimum contract term of no more than one month following a GEA migration? Please provide reasons in support of your views.

[980]

12.222 [980] agreed, noting that the proposal would result in the largest range of pricing flexibility for downstream service providers to compete on. It noted that where BT was subject to a charge control, BT was generally meant to recover its upfront costs from upfront charges and not amortise them across terms or cross subsidise generally. Accordingly, [980] considered it would be appropriate to have no minimum contract term whatsoever (i.e. rather than a minimum of one month). However, it considered

980 [980]
that, given the immaterial nature of one month, the risk to the value chain was such that it can be tolerated.

**BT**

12.223 BT said it noted Ofcom’s concern over the 12 month minimum term applied to migrations and understood why Ofcom viewed this differently to a new connection. It nonetheless raised two issues. First, that it did not believe this would be likely to directly benefit end-users as retail providers were still likely to impose contracts for migrating customers. Second, that the change was not simple or costless for BT. It would initially need to implement a manual process as its initial view was that system changes would be prohibitively expensive. It requested detailed discussions with Ofcom before Ofcom took its final decision on this remedy.

12.224 Following its response to the July 2013 FAMR Consultation, BT advised that it would in fact be able to implement an appropriate and feasible solution. As noted in paragraph 12.163, BT also advised that it would assist its implementation of this solution (along with the GEA migration charge) if we set a date on which the change must be made from following publication of the Statement (even if that is “from the end of the month following the publication of the Statement”), rather than the proposed “within 28 days of the Statement”.

**EE**

12.225 EE agreed that BT should offer a one-month minimum contract following a GEA migration, in order to reduce switching barriers in the market and to avoid BT benefiting from an inefficient double-recovery of wholesale GEA charges from the leaving and gaining CP.

12.226 However, EE considered it equally (if not more) important that BT should also offer a one-month minimum term for new GEA connections. It considered that, as new connections were likely to be more prevalent than migrations at this “customer acquisition” stage of the market, it was important that wholesale charges for new connections were not artificially high, in order to encourage vigorous competition. Due to what it considered to be high GEA connection charges, EE did not believe there should be any unavoidable costs that needed to be recovered through a 12 month minimum term. It noted that the impact of the minimum term was that CPs’ early termination charges (‘ETCs’) to consumers needed to reflect the remaining wholesale rental charges, making contractual exit more costly for consumers than for standard broadband customers.

**Sky**

12.227 Sky welcomed the proposal to reduce the minimum contract period following a migration to one month. It considered this should also apply to new connections.

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982 Teleconference between Ofcom and Openreach, 18 November 2013.


essentially argued that it must absorb the cost of a customer disconnecting within 12 months (subject to any ETCs). Sky disagreed with Ofcom’s suggestion that a longer minimum term may allow BT to have lower connection or rental charges, as it considered there were no upfront costs which were not already paid separately via the installation charge. Sky considered the same barrier to switching identified with respect to contracts following GEA migrations also applied to new connections.

TalkTalk

12.228 TalkTalk said it strongly supported the proposal for no minimum contract period following a GEA migration.985

12.229 It said Ofcom should also reconsider whether to eliminate minimum contract periods for new GEA connections.986 It said these had similar economic characteristics to minimum contract periods for GEA migrations, and acted to lower incentives for other CPs to acquire superfast customers while reducing likely rates of switching and sign up for superfast. TalkTalk believed that any revenue benefit to Openreach from minimum contract lengths could be covered from increased GEA rental charges without harming Openreach’s return on investment.987

12.230 TalkTalk expressed concern that BT’s retail divisions were not negatively affected by migration charges or minimum contract periods as any losses were offset by gains to Openreach. Further, BT’s retail divisions benefited as they did not have to pass on charges to customers given they did not have to risk absorbing any early termination charges (which are payable to Openreach). TalkTalk also expressed concern that BT’s retail divisions had benefited from the negative impact on competition that TalkTalk believed resulted from minimum contracts or migration charges, as BT’s higher market share meant that it benefited from low consumer switching. TalkTalk was finally concerned that minimum contract periods would lead to pecuniary costs (for instance, where customers are not able to pay the ETCs) and would reduce innovation, for instance by restricting CPs from offering innovative products based on shorter-term deals.988

Virgin989

12.231 Virgin emphasised the appropriateness of considering the effect of regulation in the round, as discussed in its response to Question 11.3, which is summarised from paragraph 12.172.

986 In support of this, TalkTalk provided a report by AlixPartners in an annex to its response to the 2013 FAMR Consultation.
Vodafone

12.232 Vodafone indicated it agreed with the proposals.

Analysis and conclusions

12.233 As a starting point, we would be concerned where a dominant provider imposed minimum contract periods where this was not justified by reference to objective factors such as the need to recover upfront costs. The effect of such minimum contract periods would be to reduce levels of switching, leading to reduced retail competition than would otherwise be the case.

The effects of minimum wholesale contract terms

12.234 We have considered two possible reasons for intervention to restrict minimum contract periods:

- the first relates to whether having a longer minimum term is likely to favour BT’s retail divisions at the expense of other CPs. If it were the case that the minimum 12 month term unduly favours BT’s retail divisions, then we would need to consider whether it would be in consumers’ interests to restrict BT’s flexibility on this; and

- the second reason for restricting the flexibility is if there would otherwise be a significant impact on the ability of end-users to switch and, therefore, on competition at the retail level. We recognise that longer contract periods reduce the ability to switch and so may tend to weaken competition.

12.235 Having considered these points, as with migration charges we consider there is some tension between giving BT flexibility over the level of pricing and non-price terms on VULA and our preference for avoiding impediments to switching. Our conclusion, having carefully considered our proposals and the consultation responses, is that the appropriate balance of these two conflicting considerations is different when considering the 12 month minimum term for migrations compared to when considering it for new connections. Our assessment is as follows.

12.236 The first factor is that we consider, consultation responses notwithstanding, that having a 12 month minimum term is unlikely to favour BT’s retail divisions over other CPs. TalkTalk argued that minimum contract periods put BT’s retail divisions at a competitive advantage as they do not risk absorbing any early termination charges (which are payable to Openreach). However, we note that any costs related to the 12 month minimum term (such as early termination charges paid to BT if the consumer wishes to leave early) would equally affect BT’s retail divisions and would ultimately need to be reflected in the margin between VULA and retail prices.

12.237 The second factor is that flexibility on the minimum term at the wholesale level gives BT more options for how it can vary wholesale pricing to drive take-up of VULA. In particular, flexibility on the initial minimum term may interact directly with the level of the wholesale connection charge. Sky argued that BT does not need a 12 month

minimum term as the GEA connection charge is sufficient to cover any upfront costs incurred by BT, with EE similarly considering there should not be any unavoidable costs that needed to be recovered through the minimum term. As we are not undertaking a detailed review of VULA, we do not take a view on whether or not BT is fully recovering set up charges upfront. However, having a longer minimum term may lead to BT setting lower connection or rental charges than it otherwise would, particularly if it allows BT to recover any wholesale connection costs over a longer period (rather than in an upfront charge). Further, flexibility on the minimum term provides BT with the potential to vary the balance between connection charges, minimum terms and rental charges in order to determine which is most beneficial to increase take-up of VULA services. In general terms, this appears to us to be in consumers' interests.

12.238 Our view, in light of these points, is that it would unduly undermine the flexibility on VULA terms and prices if we constrained the duration of contracts to be less than 12 months following new connections, as proposed by Sky, TalkTalk and EE.

Impact on switching

12.239 In addition, some stakeholders observed that a 12 month minimum contract period discouraged switching by increasing the early termination costs for retailers and/or consumers, reducing incentives to acquire superfast customers and also reductions in innovation such as being able to offer shorter-term retail contracts.

12.240 We recognise that there may be competition benefits from reducing the length of minimum contract terms for new connections. Indeed, it is to facilitate switching and competition that we are reducing the minimum contract period following migration, as discussed below (and reducing the price of the GEA migration charge). However, this needs to be balanced against allowing BT pricing flexibility on the level of VULA charges, which we note offers potential benefits in terms of pricing strategies that may encourage take-up of VULA services more generally (see paragraph 12.140). In our view, contract periods are a form of pricing flexibility, and we consider that the benefits of providing BT with the incentives to invest in fibre and encourage take-up of NGA are sufficient to warrant this flexibility, particularly given the risks (set out in more detail from paragraph 12.138) associated with imposing a cost-based price control on VULA at this stage.

Minimum contract periods for migration

12.241 We take a different view in respect of the minimum contract period for migrations. In that context, we consider it to be in consumers' interests to restrict the minimum term for migrations to be less than 12 months. The key difference is the approach for recovering one-off wholesale costs incurred by BT (i.e. connection costs as compared to migration costs) and the need to facilitate switching.

12.242 The minimum contract period in respect of the initial connection should provide a basis for BT to recover relevant wholesale costs and investments. A migration from one CP to another should not involve additional wholesale costs or investments incurred as a result of the migration (and not already appropriately recovered in any migration charge, including under the charge control). In addition, migrations do not directly affect VULA volumes. As a result, the impact on BT's incentives to invest and more generally on take-up of fibre is likely to be small and the removal of the minimum contract period may have the benefit of facilitating switching and promoting retail competition.
12.243 We therefore see no basis for any particular minimum contract term for migrations, or at least none beyond that required to reflect the fact that final consumers pay for broadband by means of a periodic (typically monthly) charge. Accordingly, we have decided to require BT to set the minimum contract term following GEA migration to be no longer than one month. As with the GEA migration charge discussed in paragraph 12.209, we do not see any significant adverse effects for consumers from implementing BT’s request for the requirement to come into force from the end of the month following the publication of the Statement and therefore have amended the direction we have made under the relevant condition to reflect this.

12.244 BT also observed that any reduction in minimum GEA migration contract lengths may not benefit consumers, as retail providers are likely to still impose longer minimum contract periods for migrating customers. We recognise that this is a possibility. However, where possible, our approach has historically been to intervene upstream in order to facilitate competitive downstream markets and therefore to ensure that the appropriate framework at the upstream level will provide the right incentives for competition at the retail level. Whether retail providers reduce their minimum contract periods in response to a reduction in minimum GEA migration contract lengths is a retail decision, however we have created the potential for reduced contract periods or ETCs which in turn increases the potential for end-users to switch providers. Further, reducing contract terms or reducing the ETCs that are imposed on customers could become an area of differentiation on which CPs can compete, e.g. a ‘no minimum’ contract offer to experience a particular CP’s service.

12.245 Virgin also expressed concern that we should be cautious in imposing regulation due to the impact that regulation might have on investment. As set out above, we do not consider it likely that introducing a one month minimum contract period following migration would have a particularly significant impact on BT’s investment incentives. Given this, we consider that the impact on investment incentives is low and facilitating switching confers the greatest possible benefit on end-users. Further, we also note an important factor for not extending this change to new connections is in order to preserve BT’s pricing flexibility, which facilitates it achieving a return on its investment.

The form of intervention

12.246 Our SMP Condition 1 of the legal instrument (Annex 29) includes a power for Ofcom to direct the terms of network access provided in accordance with that condition. For the reasons set out above, we have used this power to issue a Direction limiting the length of the minimum contract period following GEA migration to no longer than one month, which BT must implement from the final working day of the month following the month in which this Statement is published.

Summary of conclusions on contractual terms

12.247 We have decided to limit BT’s flexibility in setting a minimum contract period for GEA following a GEA migration, by requiring it to have a minimum contract term of no more than one month following such a migration. BT must implement this from the final working day of the month following the month in which this Statement is published.
Legal tests

12.248 We consider that the Direction to require BT to impose a contract length of no more than one month on GEA following a migration, set out in Annex 29, meets the tests set out in the CA03.

12.249 Section 87(3) of the CA03 authorises Ofcom to set SMP services conditions requiring the dominant provider to provide network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions. As noted above, we have decided to include a power for Ofcom to direct the terms of access as part of the SMP condition requiring BT to provide VULA on fair and reasonable terms, conditions and charges. We are making this Direction pursuant to that power.

12.250 We consider that we have acted consistently with our duties under section 3 and all the Community requirements set out in section 4 of the CA03. In particular, on the basis of the arguments set out above, the Direction is aimed at promoting competition and securing efficiency and sustainable competition for the maximum benefit of consumers by facilitating switching and so promoting retail competition, again while being consistent with the purpose of securing efficient investment and innovation.

12.251 We consider that the Direction meets the criteria set out in section 49(2) of the CA03 as the requirement relating to minimum contract periods is objectively justifiable, non-discriminatory, proportionate and transparent, as follows:

- objectively justifiable, in that it will facilitate switching and promote retail competition for VULA services;
- not unduly discriminatory, in that BT is the only operator to have SMP in the relevant market of the UK excluding the Hull Area and in the case of KCOM we are not requiring it to provide VULA as a specific access remedy;
- proportionate, in that, while it will facilitate switching and promote retail competition, the overall impact on BT’s incentives to invest, and more generally on take-up of fibre, is likely to be limited (as set out above) and the measure is, therefore, no more intrusive than necessary to achieve its intended goals; and
- transparent, in that it is clear in its requirements and intention, as explained in this document.

Summary of VULA conclusions

12.252 The provisions in this document relating to VULA are set out in two sections.

12.253 Section 10 set out obligations on BT that include (but are not limited to), an obligation to provide VULA on:

- fair and reasonable terms, conditions and charges;
- an EOI basis; and
- the basis of no undue discrimination.

12.254 In addition to these requirements, this section sets out that:

- subject to the fair and reasonable terms, conditions and charges, BT should have pricing flexibility over the level of VULA charges and non-price terms;

- the fair and reasonable charges obligation is not applied to the GEA migration charge, for which we are instead setting a charge control such that this charge must be no higher than £11; and

- we are setting a Direction to require BT to have a minimum contract term of no more than one month following a GEA migration.

Consistency with the EC Recommendations and the BEREC Common Position

12.255 In the following paragraphs we set out how we have taken utmost account of the documents described in making our decisions on VULA pricing, GEA migration charges and minimum contract lengths.

The NGA Recommendation

12.256 The aim of the NGA Recommendation is “to foster the development of the single market by enhancing legal certainty and promoting investment, competition and innovation in the market for broadband services in particular in the transition to next generation access networks (NGAs)” (Recommendation 1). In relation to the regulation of virtual unbundled access products (which it describes as “alternative access products which offer the nearest equivalent constituting a substitute to physical unbundling”) these should be “accompanied by the most appropriate safeguards to ensure equivalence of access and effective competition” (Recital 21).

12.257 In Ofcom’s view, our conclusions (which include not imposing a specific cost-based charge control on the wholesale price of VULA) are consistent with the aims of the NGA Recommendation, including promoting investment, competition and innovation in the market for broadband services, in particular in the transition to NGA as we consider they are met in the UK context particularly with respect to our focus on balancing the promotion of competition in NGA-based services and NGA investment. We provide further reasoning in relation to our conclusions and these objectives in the following paragraphs.

The Costing and Non-discrimination Recommendation

12.258 The Costing and Non-discrimination Recommendation991 provides further guidance on the regulatory principles established by the NGA Recommendation, in particular the conditions under which regulation of wholesale access prices should or should not be applied, as set out in Article 49.992 We consider that our conclusions on VULA


992 We note that we set out our proposals for regulation of the VULA Margin in the forthcoming 2014 VULA Margin Consultation and that we will conclude on these later in 2014. We undertake the following assessment without prejudice to the conclusions we will set out in that statement.
are consistent with the Costing and Non-Discrimination Recommendation. To the extent that the remedies we impose may differ slightly from that recommendation, we set out our reasoning below.

12.259 Article\textsuperscript{993} 49 provides that:

“The NRA should decide not to impose or maintain regulated wholesale access prices on passive NGA wholesale inputs or non-physical or virtual wholesale inputs offering equivalent functionalities, pursuant to Article 13 of Directive 2002/19/EC, where - in the same measure - the NRA imposes on the SMP operator non-discrimination obligations concerning passive NGA wholesale inputs or non-physical or virtual wholesale inputs offering equivalent functionalities, pursuant to Article 10 of Directive 2002/19/EC, that are consistent with:

(a) EoI, following the procedure in point 51;

(b) obligations relating to technical replicability under the conditions set out in points 11 to 18 when EoI is not yet fully implemented; and

(c) obligations relating to the economic replicability test as recommended in point 56

under the condition that:

(d) the NRA can show that a legacy access network product offered by the SMP operator subject to a cost-oriented price control obligation in accordance with the costing methodology specified in points 30 to 37 or 40 constitutes a copper anchor and thus exercises a demonstrable retail price constraint; or

(e) the NRA can show that operators providing retail services over one or more alternative infrastructures that are not controlled by the SMP operator can exercise a demonstrable retail price constraint. For the purposes of this condition, ‘control’ should be interpreted in accordance with competition law principles”.

12.260 We address each of these provisions in turn:

- the NRA should decide not to impose or maintain regulated wholesale access prices on passive NGA wholesale inputs or non-physical or virtual wholesale inputs offering equivalent functionalities, pursuant to Article 13 of Directive 2002/19/EC, where - in the same measure - the NRA imposes on the SMP operator non-discrimination obligations concerning passive NGA wholesale inputs or non-physical or virtual wholesale inputs offering equivalent functionalities, pursuant to Article 10 of Directive 2002/19/EC: we interpret “regulated wholesale access prices” in this provision to mean explicit cost-based wholesale charge controls which cap the absolute level of access prices (such as for VULA). We set out our decision not to impose a cost-based

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\textsuperscript{993} Although these are referred to as ‘Points’ in the Costing and Non-discrimination Recommendation, we use the term ‘Article’ in this document.
charge control on the wholesale price of VULA (and therefore provide BT with
general pricing flexibility over VULA pricing levels) in paragraphs 12.147 to 12.149.
However, we note that as set out in paragraphs 12.150, we consider that it is
justified to diverge from this general pricing flexibility for VULA with respect to the
application of a charge control on the GEA migration charge on the basis that the
benefits to switching outweigh any disadvantages from reducing BT’s pricing
flexibility for VULA;

• **EOI, following the procedure in point 51**: we have required BT to provide VULA
on an EOI basis as set out in Section 10994;

• **obligations relating to technical replicability under the conditions set out in
points 11 to 18 when EOI is not yet fully implemented**: we consider that our
conclusions are consistent with this provision as EOI is fully implemented in
relation to VULA. We are in any case, as discussed in Section 10, satisfied that
the regulated wholesale inputs of VULA (and LLU), which have been carefully
developed to ensure they are fit-for-purpose and are already being offered on an
EOI basis, ensure that competitors can technically replicate BT’s NGA-based (and
CGA-based) retail offerings995;

• **obligations relating to the economic replicability test as recommended in
point 56**: we will set out our proposals for such a test in the forthcoming 2014
VULA Margin Consultation, which we will finalise in 2014. We have decided to
publish a further consultation in light of significant stakeholder feedback on the
issue. Accordingly, it is not possible to conclude on this at the same time as we
publish our 2014 FAMR Statement (as required in Article 56). Conversely, we do
not consider it justified to further delay the FAMR Statement to align with our
VULA Margin Statement as that would prevent the entry into force of our other
FAMR remedies, including the LLU WLR charge controls and quality of service
measures. We will aim to reach a decision on the VULA Margin proposals as soon
as is practicable; and

• the NRA can show that a legacy access network product offered by the SMP
operator subject to a cost-oriented price control obligation in accordance
with the costing methodology specified in points 30 to 37 or 40 constitutes a
copper anchor and thus exercises a demonstrable retail price constraint; or
(e) the NRA can show that operators providing retail services over one or
more alternative infrastructures that are not controlled by the SMP operator
can exercise a demonstrable retail price constraint: for the purposes of this
condition, ‘control’ should be interpreted in accordance with competition law
principles: as set out in paragraph 12.135, we have identified such constraints
from both CGA broadband and services delivered over Virgin’s network.

The BEREC Common Position

12.261 The BEREC Common Position sets out that “Application of this Common Position will
assist NRAs to design effective remedies in line with the objectives of the regulatory

994 See from paragraph 10.127.
995 See from paragraph 10.190.
These objectives include, among other things, safeguarding competition and promoting efficient investment and innovation.  

12.262 Under the objective “Fair and coherent access pricing” the BEREC Common Position describes a “Competition issue which arises frequently” as “SMP operators offer pricing schemes / prices not allowing alternative operators to compete on a level playing field and/or enabling a viable business case.” It then sets out a number of best practices under this objective that are relevant to NGA pricing:

- BP42 says “When determining their price regulation NRAs need to consider that it should incentivise both efficient investment and sustainable competition”; and

- BP43 states “Where appropriate and proportionate, NRAs should require SMP operators to provide regulated products based on an explicit pricing obligation…ranging from a requirement for prices to be cost-orientated and subject to rate approval through to specific charge controls…”

12.263 We consider our analysis and decision to allow BT flexibility over the level of VULA charges is consistent with BP42 in terms of incentivising both efficient investment and sustainable competition for those reasons set out above and those provided when considering our specific provisions on obligations and safeguards in relation to VULA in both this section and Section 10. For the same reasons, we consider that these obligations and safeguards mean that it is neither appropriate nor proportionate to impose an explicit cost-based wholesale charge control on VULA prices, as set out in BP43.

12.264 However, we also note that in relation to the objective “Assurance of efficient and convenient wholesale switching”, BP35b states that “NRAs should require that the price of the switch does not act as a barrier to the wholesale switching processes happening”. In the case of switching, we consider it appropriate and proportionate to impose a charge control for the GEA Migration charge and consider that doing so is consistent with both BP35b and BP43, for the reasons set out in paragraphs 12.176 to 12.177.

12.265 We do not consider BP52 (consistency of pricing with legacy services) or BP55 (assessment of pricing schemes) to be relevant as we are providing BT with pricing flexibility, subject to the fair and reasonable terms, conditions and charges requirement.

12.266 Together, we consider that our conclusions are consistent with the aims of the BEREC Common Position including with respect to safeguarding competition and promoting efficient investment and innovation.


997 See specific paragraph references above.
Sub-Loop Unbundling

Introduction

12.267 SLU allows CPs to rent the copper access connection between end-users and an intermediate point in BT’s access network, usually the street cabinet. As with LLU, CPs can either rent the entire sub-loop connection or share it with BT. The CP establishes a fibre backhaul connection from the intermediate point, thus creating its own FTTC network. An obligation to provide SLU was introduced by the EC in January 2001998 and BT issued its Reference Offer at that time. An SLU obligation was subsequently introduced by Ofcom in the 2004 WLA Statement.

12.268 As of January 2014, SLU had been deployed in [x]% out of approximately 90,000 cabinets (or around [x]% of cabinets).999 [x]% of these were accounted for by a single CP, DRL.1000 DRL covered around 80% of premises in South Yorkshire (approximately 500,000 premises). However, it was announced on 15 August 2013 that the DRL project was to be closed, with existing DRL customers being migrated to alternative networks.1001

Policy proposals as set out in the July 2013 FAMR Consultation

12.269 In the July 2013 FAMR Consultation, we proposed to continue to require BT to provide SLU to all CPs that reasonably request in writing such services. This proposal included requiring BT to provide such ancillary services as may be reasonably necessary for the use of SLU (including backhaul to the cabinet). We proposed that SLU should be offered subject to a Basis of charges requirement in order to constrain SLU pricing.

12.270 On the specific issue of the compatibility of vectoring with SLU, we proposed that, if BT had deployed vectoring to a cabinet (that did not have SLU at the time of that deployment) and a CP requested SLU at that cabinet, then BT should take steps to set out how that CP can coordinate or cooperate with BT’s vectoring. We also proposed that such a request might be considered unreasonable if BT could demonstrate it had taken all reasonable steps to cooperate with the request, but that, despite this, it was not possible for SLU to be deployed without significantly degrading the service of existing customers at that cabinet.

Stakeholder responses to the July 2013 FAMR Consultation

12.271 In the July 2013 FAMR Consultation, we asked two questions in relation to SLU. The first was in relation to the proposal to continue to require SLU with it subject to a Basis of charges requirement. The second was in relation to our proposed approach to the issue of vectoring.

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999 BT response to the question 1.3 of the s.135 notice of 12 February 2014.
1000 Ibid.
11.6 Do you agree that we should continue to require SLU and that it should be offered subject to a Basis of charges requirement? Please provide reasons in support of your views.

12.272 [\textsuperscript{[8]}\textsuperscript{1002}] indicated agreement. It said that while it was a relatively rarely used remedy, SLU allowed operators with their own fibre to consider creating a competitive FTTC market and offer their own VULA-style services. It said that, given the relative infrequency of its use, a Basis of charges requirement was suitable for SLU.

\textbf{BT}\textsuperscript{1003}

12.273 BT said that, although it understood Ofcom’s reasons for continuing to require SLU, it had significant concerns about whether it was a viable long term remedy, considering that current evidence suggested it was not. Accordingly, it said Ofcom would need to reconsider in some depth in the next review whether it was appropriate to continue the obligation.

12.274 BT said that SLU had been offered since 2001 but that take-up remained minimal with little or no forecast growth. It said that perhaps the most significant fact was the closure of the single largest SLU based project in the UK, the publically funded DRL project (with more than 95% of SLU cabinets), and noted that DRL was looking to migrate existing customers to alternative networks as the most cost effective deal for the public. BT said its view, along with many other stakeholders, was that SLU business cases could only be made to work in certain very specific circumstances; the economics of using it for larger infrastructure cases, especially in less populated areas, would remain very challenging.

12.275 BT said it was not unreasonable to maintain SLU for the next review period, noting pricing had been investigated by Ofcom since the 2010 WLA Review. It did not support any significant change in approach or price levels and therefore it remained appropriate that SLU was subject to a Basis of charges obligation.

\textbf{EE}\textsuperscript{1004}

12.276 EE said it agreed with our proposals based on the reasons set out in the July 2013 FAMR Consultation.

\textbf{Sky}

12.277 Sky said SLU was an important input that could enable the development of competing superfast broadband services to GEA. However, Sky said that SLU was currently not fit for purpose and it had concerns over the way SLU was priced and made available by BT. Unless these concerns were addressed, it considered further

\begin{flushright}
\footnotesize

\textsuperscript{1003} P.16, EE response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.
\end{flushright}
investment in superfast broadband would likely be stifled which could result in a missed opportunity for Sky and other CPs to deploy NGA in competition with BT.\(^\text{1005}\)

12.278 On pricing, Sky said it had concerns over the high pricing of SLU compared to LLU and GEA. It considered the majority of migration scenarios were very expensive compared to the equivalent GEA migrations. Given the work to provide SLU and wires-only GEA was broadly the same, it was unclear how the two sets of prices could be justified by BT. Sky said that current SLU pricing made it uneconomic for another operator to provide SLU services with a comparable cost base that would allow it to compete with BT. Sky considered that Ofcom, as part of the FAMR, should review BT's SLU pricing in line with the cost orientation obligation and provide clear direction on its expectations, with the threat of enforcement action, in order to provide certainty to CPs who may wish to invest in SLU.\(^\text{1006}\)

12.279 On the issue of the ordering process for how BT made SLU available, Sky said that the problem was that it was a manual process not supported by BT's equivalence management platform ('EMP'). Sky considered that it would not be possible without this to provide SLU in the volume that a large CP would need to in order to fully invest in and support the product. As BT had argued that without volume use of SLU there was no business case to invest in EMP development, Sky said this meant that without Ofcom intervention the issue would not be resolved. Sky therefore requested Ofcom set a clear expectation that BT will use "the same, or very similar, products, processes and systems for both SLU and its own FTTC deployments where this is practical" and that it expected BT to develop an automated process to meet any future demand for SLU.\(^\text{1007}\)

**TalkTalk\(^\text{1008}\)**

12.280 TalkTalk argued that SLU deployments (as well as PIA deployments, as discussed from paragraph 12.373) faced two main problems, namely the very challenging viability of deploying a separate network itself and that SLU was in practice unusable apart from in micro-deployments. TalkTalk suggested that Ofcom should, separate from its market reviews, consider undertaking a broad review looking at the role of SLU across different markets and setting out a clear strategy for SLU.

**Virgin\(^\text{1009}\)**

12.281 Virgin said it agreed that it was still appropriate to require SLU. However, it said the proposed Basis of charges condition was considerably different to the existing Basis of charges condition which required pricing to be on a LRIC+ basis. It said that, while it was essential that any conditions imposed were transparent, the different


applications of the Basis of charges condition created a number of separate
conditions that varied within both the market as a whole and across the different
services (as in the case of SLU), potentially creating confusion rather than dispelling
it.

11.7 Do you agree with our proposed approach on the issue of SLU and vectoring?
Please provide reasons in support of your views, including, if you disagree
with our approach, evidence as to why an alternative approach is more
appropriate (e.g. in the form of business plans)

1010 [ ]

12.282 [ ]

[ ]

12.283 [ ] welcomed consideration of vectoring and its impact on SLU. It noted that, while
the proposed guidance was pragmatic, it would allow BT to essentially impose a
choice of vectoring technology upon industry, including existing users of SLU. It said
that this appeared at odds with Ofcom's general duties to promote competition and
innovation. However, it could not see another way to handle the issue absent an
advancement in vectoring technology.

BT

12.284 BT said that, while it welcomed the proposed guidance, further clarity and regulatory
certainty was vital in order to prevent end-user and third party CP detriment, and
wasted investment by BT in vectoring technology. It said it now had firm plans to
deploy vectoring in its VDSL network and that it was crucial there was regulatory
certainty underpinning its investment (the cost of rolling out vectoring to all fibre
cabinets was [ ]). Given the incompatibility of SLU with vectoring, BT supported the
proposed guidance and would look to it to provide initial protection against end-user
detriment that could result if BT were obliged to provide SLU where vectoring had
been deployed or was planned. 1011

12.285 However, BT sought further clarification on how the large investment required by BT
could be given sufficient regulatory certainty to proceed. It said it planned to begin
deployment of compatible DSLAMs in 2013, with plans in place to install vector-ready
technology in the network during 2014. It said the eventual business case for
widespread deployment required significant investment throughout the next review
period and beyond. It said it had not argued for SLU to be removed nationally but
believed it was right to be able to refuse SLU at a vectored cabinet (or one that is
planned for activation) as SLU in that case would materially affect end-users'
performance and nullify its investment. It suggested the German NRA's recent
decision might offer a pragmatic way forward for SLU regulation in future reviews. 1012

1010 [ ]
1011 Paragraph 14, BT response to the July 2013 FAMR Consultation,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.
1012 Paragraphs 321-322, BT response to the July 2013 FAMR Consultation,
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.
12.286 BT also said it would look for Ofcom to support BT’s position on reasonableness should CPs raise unreasonable requests. It believed there may be instances where CPs might ‘test’ the dispute process at a very low cost, i.e. by raising a prospective request for SLU with no firm view of deployment but which would have a very high risk of disruption for Openreach, downstream CPs, and end-users already using vectored products.¹⁰¹³

Sky¹⁰¹⁴

12.287 While recognising the benefits of vectoring, Sky was concerned that the deployment (or promise of deployment) of vectoring could be used to restrict the ability of CPs to invest in SLU due to possible concerns about incompatibility of equipment. Sky considered there was a risk that BT could deploy vectoring in such a way that would prevent interoperability and foreclose potential competition. Sky did not consider Ofcom’s proposal would result in a satisfactory outcome as it would result in considerable uncertainty and deter investment.

12.288 Sky considered that Ofcom needed to reject any attempt by BT to circumvent its current regulatory obligation to provide SLU. Sky considered that to prevent such foreclosure, Ofcom must promote the development of a mutually agreed technical solution through NICC standards and consider whether to require this standard to be adopted by CPs.

Virgin¹⁰¹⁵

12.289 Virgin said that the need for the use of shared or compatible DSLAMs to allow vectoring provided BT with the potential to inhibit further SLU roll out by requiring the prospective operator to ensure that its technology was compatible with BT’s. It said that, while the network access obligation required BT to provide SLU on a reasonable basis, BT retained a wide discretion as to how it complied with this condition which would not necessarily prevent the potential competitive concern identified. Virgin said that, given Ofcom’s proposal to continue with SLU, it would be unfortunate for SLU to be undermined by inaction on the issue of vectoring.

12.290 Virgin agreed with the proposal not to accede to BT’s suggestion that the SLU obligation should be removed to resolve any vectoring issues. However, it said this ignored the underlying competition concern identified by Ofcom. It said the proposed approach would appear to favour a BT roll out of vectoring that was likely to precede wider development of SLU. It said that on the assumption BT deployed vectoring nationally, BT could potentially be able to routinely rely on the proposed guidance that “it was not possible for SLU to be deployed without significantly degrading the service of existing customers at that cabinet”. Virgin urged a more industry-led discussion on achieving a “vectoring neutral” solution that did not impede SLU take-up yet further (to the extent that at the next review a lack of take-up was seen by Ofcom as reason to remove the remedy, as suggested in paragraph 11.500 of the July 2013 FAMR Consultation).

Our assessment of stakeholder responses

Imposing an SLU obligation

12.291 Despite general support for the requirement to provide SLU (with no CP suggesting it should not be imposed as a remedy), we are not aware of any plans from any CPs \[\text{1016}\] to invest in SLU on any material scale. This lack of use appears to be a reflection of the challenging economics of SLU deployment (a factor specifically recognised by TalkTalk). Fixed costs (such as cabinets and backhaul infrastructure) have to be recovered from fewer customers than LLU given the smaller areas covered by cabinets as opposed to exchanges, which is likely to result in higher prices for SLU-based services. In addition, the static costs of competition (the cost difference between there being single and multiple FTTC networks) were found in the 2010 WLA Statement to be between 37% and 79% (depending on the level of equipment and labour duplication, network utilisation and end-user churn costs)\[\text{1016}\], and we have no evidence to suggest that these costs have materially changed.

12.292 Further, as noted in paragraph 12.11, in addition to Virgin Media’s 12.6 million premise cable network, BT’s fibre roll-out has now reached over 66% or 19 million premises\[\text{1017}\] and will extend significantly further with State aid funding. This may reduce opportunities for SLU deployment given that CPs will have to recoup costs from an even smaller set of consumers for any given cabinet (i.e. there will be some consumers that will not switch from BT’s network).

12.293 However, the lack of use could also be a function of the relative lack of demand over the period for superfast broadband (i.e. with around 27% take-up there has so far been limited scope for the higher costs of SLU services to be outweighed by greater revenue from superfast broadband services). Aside from the main infrastructure owners (BT and Virgin), other CPs only have a relatively small number of subscribers on superfast, fibre-based products, regardless of whether GEA or SLU is used (or the network has been built independently of BT’s).

12.294 Yet, the forecasts discussed in paragraphs 12.14-12.15 suggest that superfast broadband will account for a significant proportion of broadband connections by the end of the review period. As this increase in demand occurs, it is possible that the higher costs associated with SLU could begin to be outweighed by additional revenue. Further, despite a lack of firm plans by CPs to use SLU, CPs did engage in previous SLU trials and others have indicated that SLU might form part of future proposals \[\text{1018}\].

12.295 Consequently, we are maintaining an obligation on BT to offer an SLU product along with those ancillary services as may reasonably be necessary for the use of SLU, on fair and reasonable terms and conditions to all CPs who reasonably request in writing such services. BT should also provide such ancillary services or other network access as Ofcom may from time to time direct to ensure the provision of SLU (we discuss below the imposition a Basis of charges obligation for SLU rather than a fair

\[\text{1018}\] \[\text{1016}\].
and reasonable charges condition). We are maintaining the SLU obligation for the reasons set out below.

12.296 As our assessment of the WLA market shows, the level of investment required by a third party to replicate BT’s NGA network on a sufficiently large scale to compete at this level is a significant barrier to entry. In the absence of requiring access to BT’s infrastructure for the purposes of providing retail NGA services, we consider that BT would have an incentive and ability to refuse access at the wholesale level, thereby favouring its own retail operations with the effect of hindering sustainable competition on the corresponding downstream markets, ultimately against the interests of consumers. Therefore, it is appropriate to maintain the current SLU remedy to allow third party CPs to deploy their own FTTC NGA networks.

12.297 As explored in paragraphs 12.11 to 12.15, we consider that superfast broadband will play an increasingly important role in this market. As such, there is the potential that the demand for NGA may improve such that it supports the economics of CPs deploying NGA in competition with BT. Continuing the obligation would, in addition, continue to enable those that have already deployed SLU-based networks to offer services to consumers.

12.298 The retention of SLU also continues to support investment and competition (e.g. with CGA and/or Virgin) by non-BT CPs where BT is not deploying NGA, such as in Virgin-only areas, and by non-BT CPs using State aid funding in areas where there is no NGA.

12.299 Finally, we note that while the SLU product has been developed using significant BT, industry and Ofcom resources, we consider there would be limited additional resource required to support its continuation.

Non-price changes to the remedy

12.300 Sky suggested that the way in which SLU is made available by BT could limit investment in SLU. Sky’s view was that it would not be possible to provide SLU in a sufficiently large volume because of the manual process used by BT for making SLU available. Sky requested that Ofcom set a clear expectation that BT will use “the same, or very similar, products, processes and systems for both SLU and its own FTTC deployments where this is practical”, and that BT will develop an automated process to meet any future demand for SLU.1019

12.301 We first note that, since the 2010 WLA Statement, a number of changes to the SLU product have been progressed through the industry working group, facilitated by OTA2. It is not clear which further precise changes would directly result in the SLU product being used to deploy a network of a material size. Further, changes such as automation may involve costs disproportionate to the relatively low demand for the product. While it could be argued that making such changes could help prompt demand, in order to justify imposing any requirement on BT that would require it to incur costs – such as the suggestion by Sky to have SLU supported by BT’s EMP – we would want, as a starting point, to have evidence that the changes would be likely to make it economic for an interested CP to actually deploy SLU, thereby helping to

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recover that cost. Despite requesting it, we have yet to receive such evidence. We address this issue in more detail from paragraph 12.312.

12.302 As such, we are not specifying any particular product characteristics, allowing the product to remain flexible and adaptable to CPs' specific needs. We consider that the most appropriate way for CPs to seek any changes they consider necessary to fulfil their SLU product requirements is to raise a request with BT through the SoR process (we discuss the SoR process further in Section 10). We note that if a CP does not consider BT has adequately responded to a reasonable request for network access, it could consider raising this as a dispute with us.

12.303 We similarly are not requiring EOI for SLU on the grounds that to do so would be too costly. This would likely require BT to re-engineer existing products and processes, which could be both costly and disruptive. We consider that this would be disproportionate given the current and projected low level of use of SLU and thus limited expected competition benefits from applying EOI. We agreed a variation to the Undertakings in 2009 allowing BT to operate as a vertically integrated operator across the SLU boundary given the likely cost of implementing EOI\(^{1020}\), and, having taken into careful account the consultation responses, we consider that there is no evidence to suggest a change in approach is appropriate or proportionate.

12.304 As Sky requested, we would however expect BT to use the same, or very similar, products, processes and systems for both SLU and its own FTTC deployments where this is practical. Indeed, we consider that BT’s ability to artificially introduce differences between SLU and its own FTTC deployments or maintain differences without an objective justification will be addressed by the requirement we are imposing on BT not to unduly discriminate.

**Pricing of SLU**

12.305 In the 2010 WLA Statement, we imposed a Basis of charges condition requiring BT to set cost orientated charges in respect of SLU. Specifically, this condition set out that LRIC+ was the most appropriate basis for setting the charges for SLU. We set out that it was too early for us to be able to set a meaningful SLU charge control (in addition to the general cost orientation obligation) given the limited demand for SLU to date and, because of this, the very limited information available on the cost of providing it.

12.306 Having carefully considered the consultation responses, we continue to consider that some form of price regulation is appropriate to support the obligation to provide SLU. This is on the basis of our view that, because competition is not effective in the WLA market (as set out in Section 7), BT has the ability and incentive to set excessive prices both in order to maximise its profits and, because BT is vertically integrated, to increase the costs of competing providers. Such price regulation would guard against the risk of adverse price effects such as excessively high SLU prices that undermine the effectiveness of the obligation to supply this service and/or result in higher retail prices which would be detrimental to consumers. We have therefore considered whether it is appropriate to maintain a Basis of charges condition specifying that BT’s

charges should reflect its costs or whether we should instead set an explicit charge control for SLU services.\textsuperscript{1021}

12.307 Our conclusion is that it is appropriate to continue to apply a Basis of charges condition. The benefits of adopting an explicit charge control are likely to be limited given the low current and expected take-up of SLU. In our view, the limited benefits of a charge control are outweighed by the drawbacks. In particular, any charge control would probably be more onerous to set for stakeholders and would be dependent on forecasts (e.g., costs, take-up) which may not be reliable, whereas a more general obligation requiring BT to set cost-reflective charges provides greater scope to reflect changes in factual circumstances during the period covered by this market review. While an explicit charge control would provide greater certainty to stakeholders, a reasonable degree of certainty about prices can still be achieved under a Basis of charges condition for SLU.\textsuperscript{1022} Below we set out the guidance to provide this certainty, and note that the 2011 SLU Dispute Determination\textsuperscript{1023} (which involved BT and the main buyer of SLU) is likely to provide further clarity as to what prices would be appropriate.

12.308 We consider (as in the 2010 WLA Statement) that where parts of the SLU product or process are the same as products or processes within other products, then we would typically expect BT to take a consistent approach when assessing costs. In such situations we would therefore expect these parts of the cost stack to be the same. The costs recovered from SLU should only differ from the costs BT recovers from other services that use equivalent components where there is an objective justification for the difference.

12.309 We are thus applying a Basis of charges condition for SLU where charges are reasonably derived from the costs of provision by reference to relevant LLU charges. This applies on an annual basis such that prices should reflect average costs in any year. Specifically, SLU charges must be based on equivalent LLU charges, with any differences between the two reflecting differences in forward looking LRIC, including an appropriate return on capital employed. Where there are charges for which there is no LLU equivalent, these are to be set on a forward looking FAC basis. We consider that minor SLU charges are likely to be largely incremental in nature, and so we would expect that the allocation of common costs would only have a small impact on the other minor SLU charges.

12.310 The intention of setting out the approach underpinning the Basis of charges condition is to provide as much certainty on the approach BT should take in setting charges for the specific regulated access products. The result of this is that the approach will differ for each of these products (and may differ to how it was previously imposed). However, we think this is warranted as each product is different and, in doing so, the approach is clear in how it applies in each case so should not cause confusion over the interpretation of the Basis of charges condition for each regulated access product.

\textsuperscript{1021} We note in this regard Ofcom, Cost orientation, 5 June 2013, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/cost-orientation/summary/Cost_orientation.pdf}.

\textsuperscript{1022} Ibid.

\textsuperscript{1023} Ofcom, CW/01067/02/11: Determination to resolve a dispute between DRL/Thales and BT relating to Sub Loop Unbundling charges, 15 July 2011, \url{http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_01067/}. 

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12.311 In its response to the consultation, Sky expressed concerns about BT’s pricing of SLU, which it considered to be high compared to LLU and GEA, and felt that this provided disincentives to provide SLU services. As we noted in the July 2013 FAMR Consultation, since the last review, a dispute on SLU pricing was raised by DRL. In this dispute, we found that SLU pricing was broadly consistent with the guidance for cost orientation set out in the 2010 WLA Statement (with the exception of some items from the cost stack which were removed as they were not relevant for SLU provision).\footnote{Frames engineering costs were removed from SLU SMPF connections.}

Review of other SLU terms, conditions and charges

12.312 TalkTalk argued that SLU (and PIA, as discussed from paragraph 12.373) deployments faced two main problems, the first being the challenging viability of deploying a network itself and the second that SLU is in practice unusable. Similarly to the latter issue, Sky stated that current SLU pricing made it uneconomic for another operator to provide SLU services in competition with BT. Both recommended Ofcom give detailed consideration to the SLU remedy.

12.313 In response, we firstly note that the price of SLU is not the only cost involved in deploying an FTTC network – the cost of the cabinet, local power and backhaul are considerable additional costs that must be recovered. An important part of any review would be information from CPs setting out the price\footnote{This need not be a single price, in the sense that SLU has multiple components but could show different scenarios. For example, at £W, X cabinets would be economic to deploy SLU while at £Y, Z cabinets would be.} and potentially other conditions\footnote{E.g. ‘non-price’ features of BT’s SLU product, such as SLU being supported by BT’s EMP.} which would make it economic for them to invest using SLU on a material scale.\footnote{We have repeatedly requested this from CPs that have expressed an interest in SLU but no such evidence has been forthcoming.} This would allow us to assess the practicability and potential benefits and trade-offs of requiring BT to make such changes. Otherwise, there is a risk that significant industry time and effort spent confirming SLU pricing and conditions are appropriate, or, where it was found necessary to require BT to reduce prices or make other changes, still does not result in SLU deployment becoming economic. To be clear, we remain open to considering such information at any time – not solely in the context of a market review. We also discuss this issue in relation to changes to PIA, from paragraph 12.392.

12.314 We noted in paragraph 12.294 that some CPs have indicated SLU might form part of future proposals [\textendash;]. However, if those or other proposals do not come to fruition over the market review period (and this is not simply due to the vectoring issue considered next) and SLU use remains low, this will be a relevant consideration in the next market review as to whether it is appropriate to reconsider the imposition or form of the SLU remedy.

Vectoring

12.315 The presence of cross-talk, a form of electromagnetic interference on copper-based networks, can have a significant effect on VDSL speeds, reducing them by up to 50% or more. Vectoring uses noise cancellation technology standardised by the International Telecommunications Union to mitigate the effect of cross-talk.
12.316 Vectoring is important in part because it can enable CPs to offer higher speeds than currently possible over FTTC, but also because it can enable the existing performance to be maintained, for example as take-up of FTTC increases. Internationally, and particularly within Europe, there is a general acceptance that vectoring will be deployed in the coming years and we consider that this is equally to be the case in the UK.

12.317 While at this stage BT has not activated vectoring on its FTTC network, it stated in its response to the July 2013 FAMR Consultation that it has firm plans to deploy vectoring.\textsuperscript{1028} It conducted a trial of vectoring on three cabinets in Barnet and three in Braintree in the second half of 2013, reporting a material improvement in speeds.\textsuperscript{1029}

12.318 A number of CPs raised concerns about the issue of the compatibility of vectoring with SLU including around how BT might deploy vectoring in its network. We have therefore aimed to provide further clarity on our position in this Statement.

**Current vectoring technology**

12.319 We first consider the current state of vectoring technology. Presently, to work optimally, current vectoring technology requires all the copper lines in the cable to be controlled and vectored by the same system. Otherwise the presence of non-controlled or ‘alien’ lines can degrade the benefits of the vectoring. Vectoring can be implemented by controlling all lines:

- on a single line card (‘board level vectoring’);\textsuperscript{1030}
- on a single DSLAM with multiple line cards (‘system level vectoring’); or
- more recently, on interconnected DSLAMs from the same vendor (‘cross-DSLAM’ or ‘node level’ vectoring).\textsuperscript{1031}

12.320 To maximise the effectiveness of vectoring, a CP implementing vectoring would typically seek to control all relevant lines\textsuperscript{1032} using one of the techniques above or at least attempt to minimise the number of alien lines. This may be complicated in an SLU environment where there are two CPs controlling the lines in a single cable. This could result in a number of lines ‘alien’ to the equipment of each CP deploying vectoring which could degrade the benefits of the vectoring.

12.321 We do not however consider that this automatically means SLU and vectoring are incompatible. We note that CPs may be able to use existing technical solutions to facilitate the use of vectoring in an SLU environment, namely where each CP uses DSLAM systems from the same vendor and establishes a common vectoring system.

\textsuperscript{1028} Since receiving its response, we now understand BT has started to deploy ‘vectoring-ready’ DSLAMs in its network (i.e. capable of vectoring but not currently doing so), but has yet to activate vectoring on those DSLAMs (i.e. actively vectoring the lines connected to the cabinet).

\textsuperscript{1029} BT Openreach, *Vectoring Large Scale Field Trial: High Level Report*, March 2014.

\textsuperscript{1030} Recognising this is only like to be relevant where the mapping is such that all VDSL lines were connected to a single line card (i.e. where they are connected to multiple line cards, then system level vectoring would be required).

\textsuperscript{1031} Noting this may also require the same model to be used.

\textsuperscript{1032} This may for example be required by operators deploying a second DSLAM for capacity reasons.

\textsuperscript{1033} I.e. lines with VDSL active on them.
on all sub-loops (i.e. a ‘cross-CP’ version of node level vectoring as described in paragraph 12.319).

12.322 There is also another solution that may help to facilitate coexistence – ‘Central Dynamic Spectrum Management,’ which requires CPs to submit their preferred xDSL technology and DSLAM systems to a centralised management system which automatically adjusts the signal strength of each connection to ensure minimum interference on other lines.\textsuperscript{1034} However, we recognise this may not achieve the full benefits of vectoring.

12.323 We are not currently aware of a standard or solution that allows vectoring to be coordinated across DSLAMS from different manufacturers, whether operated by a single CP or different CPs. However, we note that vectoring technology is in its infancy and could conceivably evolve to, for example, allow coordination between CPs using equipment from different vendors, potentially without centralised control.\textsuperscript{1035} We understand that the NICC is undertaking some work on this issue in the UK context and we would encourage interested CPs to engage in this.

Our approach to SLU and vectoring

12.324 We firstly note that other European NRAs have put in place specific remedies regarding vectoring and SLU ranging from withdrawing SLU to complex arrangements for when SLU must be offered and on what conditions it can be withdrawn. In the UK context we consider it is better not to set specific rules in an SMP condition for the following reasons.

12.325 We want to encourage the deployment of vectoring as we consider it is likely to provide positive outcomes for consumers. We also recognise that coordinating SLU and vectoring is currently difficult but not impossible (and may become less difficult in the future). Our expectation is that CPs should try to facilitate coordination, and we note that CPs deploying vectoring and/or SLU have an incentive to explore coexistence. We therefore provide further clarity below on our position which we consider will allow the development of both vectoring and SLU while encouraging CPs to engage commercially to ensure that both the benefits of both can be realised.

12.326 We think that adopting this approach is appropriate in the face of rapidly changing technology and uncertainty over the exact timing of deployment of vectoring and the future of SLU deployments. Accordingly, our considerations are designed to be an interim position, pending the developments of a solution that allows standardised coordination of vectoring and SLU.

12.327 We set out our likely approach to two scenarios below.

12.328 Given BT’s stated plans to deploy vectoring in its NGA network, we have considered the scenario that it may face if another CP wishes to deploy SLU where BT has

\textsuperscript{1034} Sometimes this is referred to as DSM Level 2, where vectoring is referred to as DSM Level 3. We understand this may work where both CPs are using vectoring or in mixed environments where one CP is using vectoring and the other is not.

\textsuperscript{1035} The European Competitive Telecommunication Association (ECTA) noted to ComReg (Paragraph 4.46, ComReg, \emph{Next Generation Access: Remedies for Next Generation Access market}, 31 January 2013, \url{www.comreg.ie/_fileupload/publications/ComReg1311.pdf}) that further generations of the technology will likely facilitate working with SLU.
activated vectoring (noting that we are not aware of any firm plans by any other CP to deploy or expand use of SLU on any material scale, i.e. beyond existing deployments and trials). We consider that in such a case the service provided to end-users at a particular cabinet should not be degraded by the provision of SLU and, similarly, the SLU CP will want to cooperate with BT in order to be able to potentially deploy vectoring itself.

12.329 We note that Condition 2 in Part 3 of Schedule 1 to the notification in Part I of the legal instrument (Annex 29) states that BT must provide SLU services where a third party ‘reasonably requests’ them. We consider that if BT has already activated vectoring at a cabinet and a CP requests SLU at that cabinet, then BT should work with the CP to determine how that CP can coordinate or cooperate with BT’s vectoring (we would expect the CP to actively engage in this process). Although it would depend on the specific facts of any case, a request for new SLU access at a vectored cabinet might be considered unreasonable if BT could demonstrate it had taken all reasonable steps to coordinate the vectoring, based on the available technology at the time, or otherwise cooperate, but that, despite these steps, it was not possible for SLU to be deployed without significantly degrading the service of customers at that cabinet. We note that if a CP did not think that its request had been refused on reasonable grounds, then it could bring a dispute to us.

12.330 In response to requests from stakeholders for further clarity on our position, we have also considered the scenario where a CP is already buying SLU at a cabinet where BT subsequently wishes to deploy and activate vectoring. Firstly, it is important to note that the presence of SLU at the cabinet does not prevent BT from deploying or activating vectoring, although we recognise that without coordination the presence of SLU may mean that the full benefits of vectoring will not be realised. Second, we consider that in this circumstance it is unlikely to be reasonable for BT to withdraw SLU as this would significantly impact the investment in SLU undertaken by the CP and create significant uncertainty around future investment in SLU.

12.331 In this scenario, the benefits of vectoring have to be balanced against the benefits of competition based on SLU and we would expect both BT and the SLU CP to work together to ensure that vectoring by one or both parties can be implemented in the most optimal way. If standardised coordination of vectoring and SLU has not been developed by the time of the next market review, we will need to consider whether in this scenario it remains appropriate to ensure the continued provision of SLU (at cabinets where both SLU and BT’s FTTC is present) where the full benefits of vectoring to consumers are not able to be realised. This is likely to depend on the actual volumes of SLU that have been deployed over the market review period at such cabinets (i.e. which represents the level of competition and resulting benefits of competition to consumers).

Summary of SLU decisions

12.332 We are setting an obligation on BT to offer an SLU product to all CPs who reasonably request in writing such services, for the reasons set out above. BT is also required to

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1036 We consider that in this scenario it is important that vectoring has been activated. Any refusal to provide SLU based on plans to deploy or activate vectoring is likely to be more difficult to justify.
1037 With or without vectoring activated.
1038 As set out above, we will also consider in the next market review whether it remains appropriate to impose SLU as a remedy.
provide such ancillary services as may be reasonably necessary for the use of SLU (including backhaul to the cabinet). This provides CPs with a complementary alternative to VULA to offer superfast services over FTTC networks or to deploy to areas where BT has not deployed its NGA network. In order to constrain SLU pricing, we are imposing a Basis of charges condition as described.

12.333 The condition is set out in full in Annex 29.

12.334 The requirement to offer SLU, on the basis of these specific provisions, is in addition to the general remedies imposed in Section 10.

**Legal tests**

**Obligation to supply SLU**

12.335 Section 87(3) of the CA03 authorises Ofcom to set SMP services conditions requiring the dominant provider to provide network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5) of the CA03, include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

12.336 In setting this condition, we have also taken account of the factors set out in section 87(4) of the CA03. In particular, the economic viability of CPs other than BT building alternative access networks in the absence of regulatory intervention. We consider the economic case for doing so is challenging. We have also taken account of the feasibility of BT providing SLU services, noting that it already does so. We consider the obligation should also continue to help secure effective competition in the long term and have taken account of BT’s investment in its NGA network, both as set out above.

12.337 We have considered our duties under section 3 and the Community requirements set out in section 4 of the CA03. In particular, the obligation to provide network access in the form of SLU promotes and secures efficiency and sustainable competition and the maximum benefit for customers because it enables third party CPs to compete with BT downstream with respect to FTTC-based services. The limitations on our intervention, in terms of not requiring any significant changes to the existing remedy, as well as the Basis of charges obligation set out in paragraph 12.309, are consistent with both securing those ends and securing (and appropriately reflecting) efficient investment.

12.338 We consider that the performance of our principal duty in section 3 of the CA03 (to further the interests of citizens in relation to communications matters and to further the interests of consumers in relevant markets, where appropriate by promoting competition) would also be secured or furthered by the SLU obligation through promoting competition in this upstream access market.

12.339 The obligation satisfies the criteria set out in section 47(2) of the CA03 because it is:

- objectively justifiable, in that the obligation relates to the need to ensure that competition develops ultimately to the benefit of consumers. SLU services are aimed at stimulating competition in the provision of broadband and telephony services and enhancing competition in areas of limited local access competition.
Removing the obligation could result in BT withdrawing the product or otherwise changing it to the detriment of the existing level of downstream competition;

- not unduly discriminatory, in that the obligation aims to address BT’s market power in the relevant market of the UK excluding the Hull Area, in which it is the only CP in respect of which we have made a finding of SMP (and as the obligation imposed on KCOM to provide network access on reasonable request is sufficient to ensure that KCOM provides SLU services should a reasonable request be made);

- proportionate, in that the obligation is necessary, but no more than necessary, to promote efficiency and sustainable competition and the maximum benefit of customers of CPs, taking into account the fact that BT already supplies this service; and

- transparent, in that the obligation is clear in its intention to require BT to provide an SLU product and ancillary services to other CPs.

**Basis of charges condition**

12.340 Section 87(9)(a) of the CA03 authorises the setting of SMP services conditions imposing on the dominant provider such price controls as Ofcom may direct in relation to matters connected with the provision of network access to the relevant network, or with the availability of relevant facilities. Section 87(9)(b) further authorises SMP services conditions imposing such rules as Ofcom makes for the purposes of matters connected with the provision of network access to the relevant network, or with the availability of relevant facilities about the recovery of costs and cost orientation. In each case, in setting such conditions we must be satisfied that the conditions about network access pricing set out in section 88 of the CA03 are also satisfied.

12.341 We consider that the condition satisfies the requirements of section 88(1) of the CA03 as our analysis indicates that there is a risk of adverse effects arising from price distortion. Moreover, the condition promotes efficiency and sustainable competition and provides the greatest possible benefits to end-users by enabling competing providers to buy network access and supporting ancillary services at levels that might be expected in a competitive market. The extent of investment of the dominant operator has been taken into account as set out in section 88(2), as the obligation provides for an appropriate return on the capital employed to be included in the charges.

12.342 Ofcom has also considered its duties under section 3 and all the Community requirements set out in section 4 of the CA03. In particular, the condition is aimed at promoting competition and securing efficiency and sustainable competition for the maximum benefit of consumers by ensuring that charges for wholesale services are set at a level that enable CPs to compete downstream. For those reasons, we also consider that the condition is appropriate in order to promote efficiency and sustainable competition and to provide the greatest possible benefits to end-users by enabling competing providers to buy network access at levels that might be expected in a competitive market. At the same time, given the cost standard we are imposing, which allows for an appropriate return on capital, we consider that the condition is also consistent with the purpose of securing efficient investment.

12.343 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The condition is:
• objectively justifiable, in that the condition would ensure that competing CPs could buy services at charges that would enable them to develop competing services to those of BT in downstream markets to the benefit of consumers;

• not unduly discriminatory, in that no other operator has SMP in the relevant market of the UK excluding the Hull Area (in the case of KCOM we are not requiring it to provide SLU as a specific access remedy);

• proportionate, in that the condition ensures, but does no more than ensure, that BT is unable to exploit its market power, while at the same time allowing BT a fair rate of return that it would expect in competitive markets; and

• transparent, in that it is clear in its intention, in particular to ensure sets charges that are reasonably derived from the costs of provision by reference to relevant LLU charges.

Consistency with the EC recommendations and the BEREC Common Position

12.344 We consider that the application of an SLU remedy along with those ancillary services as may reasonably be necessary for the use of SLU is consistent with Recommendation 29 of the NGA Recommendation which states that NRAs should impose an obligation of unbundled access to the copper sub-loop. The same recommendation states that an SLU remedy should be supplemented by backhaul measures “including fibre and Ethernet backhaul where appropriate”. In this regard, we note that BT is required to provide the necessary ancillary services (including backhaul, noting it is already required to supply leased line products which can be used for SLU backhaul under the provisions of the BCMR), that PIA supports the deployment of backhaul for SLU use, and that CPs can build their own backhaul (as DRL did). We do not consider it would be proportionate to require BT to expend resources developing a fourth backhaul option, noting the relative use of SLU. We note, too, that Recommendation 30 says:

“When NRAs impose copper sub-loop unbundling, the SMP operator should be required to complement the existing LLU reference offer with all necessary items. The price of access to all items should be cost-oriented in accordance with Annex I”.

Our Basis of charges condition is consistent with that provision.

12.345 The Costing and Non-discrimination Recommendation sets out that NRAs should consider, if they believe that a non-discrimination obligation is appropriate, whether it would also be proportionate to impose EOI (Recommendation 7). We note that the considerations a NRA should take into account include the costs (especially whether the competition benefits outweigh the costs of system redesign) and the potentially positive effects on innovation and competition. As set out in 12.303, we do not consider it proportionate to require BT to provide SLU on an EOI basis. We consider that the no undue discrimination obligation is consistent with EOO (As set

1039 Noting specifically that Recital 19 states “requiring the SMP operator to provide legacy copper-based wholesale inputs over existing systems on an EoI basis is less likely to create sufficient net benefits to pass a proportionality test due to the higher costs of redesigning existing provisioning and operational support systems to make them EoI compliant”.
out in Section 10), which Recommendation 9 sets out should be applied in the absence of EOI. Further, given the requirement for EOO, which includes requirements around comparability of functionality, we do not consider it necessary to put in place further obligations to ensure technical replicability (Recommendations 11-18).

12.346 We also note the Costing and Non-discrimination Recommendation recommends not imposing pricing obligations, including cost orientation, where certain conditions are met (Recommendations 48). These conditions include requirements such as EOI, which could act to constrain prices in a way that makes additional pricing obligations unnecessary. Since, for the reasons given, we do not consider it appropriate to impose an EOI requirement for SLU, our decision to impose a Basis of charges obligation is consistent with the Costing and Non-discrimination Recommendation.

12.347 We consider that the decision to require SLU is consistent with BP7 and that the requirements to make available the specified ancillary services with associated pricing obligations fulfils BP16.

**Physical Infrastructure Access**

**Introduction**

12.348 We introduced PIA as a remedy in the 2010 WLA Statement. PIA requires BT to provide third parties with access to its duct and pole network that could facilitate the deployment of alternative NGA infrastructure. We considered that allowing BT’s competitors to use this physical infrastructure in BT’s access network could promote competition and investment in NGA network deployment by removing a significant barrier to infrastructure deployment.

12.349 While we considered that VULA would be the primary focus of NGA-based competition over the review period (i.e. where BT had deployed its NGA network), we envisaged that PIA could be attractive to companies wishing to address market opportunities in advance of BT’s NGA deployment and in locations which may be in receipt of public funding support.

**Developments since the 2010 WLA Review**

12.350 While a number of CPs took part in trials of PIA following the introduction of the remedy, there has been very little use of PIA on a commercial basis. A key use of PIA – by those receiving public funding, such as in BDUK areas – has not been borne out as no CP other than BT has yet won contracts to deploy NGA in these areas.

**Policy proposals in the July 2013 FAMR Consultation**

12.351 In the July 2013 FAMR Consultation, we proposed to impose an obligation on BT to offer PIA on the basis of fair and reasonable terms and conditions (but not charges). We did not propose to make any changes to the product (including changing its permitted uses). In order to constrain PIA pricing, we proposed a Basis of charges condition.

**Responses to July 2013 FAMR Consultation**

12.352 We asked two questions in relation to PIA in the July 2013 FAMR Consultation.
11.8 Do you agree that we should continue to require PIA and that it should be offered subject to a Basis of charges requirement? Please provide reasons in support of your views.

12.353 In summary, no respondent called for the removal of the remedy. BT\textsuperscript{1040}, Geo Networks Ltd. (‘Geo’)\textsuperscript{1041}, Virgin\textsuperscript{1042} and Vodafone\textsuperscript{1043} indicated PIA should be maintained. However, Geo suggested changes to the remedy\textsuperscript{1044} and Virgin said it was not fit for purpose.\textsuperscript{1045} Sky, TalkTalk and Colt did not address the question directly, nor did Sky or TalkTalk explicitly state their support for retaining PIA – although each party’s comments in response to question 11.9 of the July 2013 FAMR Consultation indicates they are supportive. Below we consider the three respondents that made more detailed comments, before considering responses on changes to the PIA remedy as discussed in the next question.

12.354 We also note that, in a recent report, the Public Accounts Committee recommended that, as part of its current review, Ofcom should address the impacts of the terms and conditions attached to accessing BT’s infrastructure. It said that despite Ofcom introducing requirements to allow competitors to access BT’s physical infrastructure, the conditions attached have deterred any other providers from exploiting this access.\textsuperscript{1046}

\textsuperscript{1047} agreed with the proposals. It said that while Ofcom had cited evidence that would suggest the take-up had not been as high as expected, it also noted the advancement of next generation technology over the last review period had been slower than anticipated and therefore considered it would be premature to consider removal.\textsuperscript{1047} said it very much envisaged PIA as being a way of extending existing fibre runs to cabinets for SLU, and to premises as a way of competing with BT (and increasingly Virgin) on NGA.

\textsuperscript{1040} Paragraph 325, BT response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.
\textsuperscript{1041} P.1, Geo response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Geo_Networks_Ltd.pdf.
\textsuperscript{1042} P.21, Virgin response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Virgin_Media.pdf.
\textsuperscript{1044} P.1, Geo response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Geo_Networks_Ltd.pdf.
\textsuperscript{1045} P.21, Virgin response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Virgin_Media.pdf.
\textsuperscript{1047} [\textcopyright]
12.356 BT agreed that it was reasonable to maintain PIA for the next review period and that it was appropriate it remained subject to a basis of charges obligation.

12.357 BT said it had worked pro-actively with Ofcom, the OTA2 and CPs to formally introduce PIA in November 2011, following significant negotiation and development. It said that after initial trials no strong interest was expressed in the product and no demand had materialised in two years. It said that the availability of PIA in itself did not radically transform business cases for less populated rural areas, noting that infrastructure business cases were challenging for all operators including BT.

12.358 BT said it was not specifically seeking the removal of PIA as it understood it may yet play a part in future CP deployments. However, in its view it would be necessary in future reviews for Ofcom to fully consider whether PIA remained appropriate as a national level regulatory remedy for the whole of the UK market. It said that PIA added an additional and potentially unsustainable layer of intervention in areas where BT or others were already investing heavily to build new infrastructure.

Colt

12.359 Colt said that there were serious questions about whether the form of regulatory controls currently deployed by Ofcom could genuinely be said to represent a viable model for the future. It said it believed it would be increasingly difficult for Ofcom to continue with its current approach to market analysis and wholesale obligations.\(^{1049}\) Colt said the present demand for PIA was low because there were too many restrictions on the product which collectively made it unworkable. It said Ofcom could comprehensively address the lack of demand for PIA by removing the myriad of restrictions on the manner in which it is used.\(^{1050}\)

11.9 Do you agree that PIA should continue on the same basis as it is currently applied? Please provide reasons in support of your views, including, if you disagree with our approach, evidence of specific business plans or intentions to invest in deploying NGA networks that are currently unviable, but would become viable with your suggested changes.

12.360 Colt said it had no evidence to suggest that the current basis was unreasonable or not in the round, as the majority of its sub-duct arrangements were executed many years ago. However, it was currently investigating the effectiveness of PIA for extending fibre runs to both premises and for potential SLU (with its product) which would become increasingly more viable with more aggressive pricing (especially compared to civil works).

\(^{1051}\) [X]
BT

12.361 BT agreed that PIA should continue to be provided on the same basis as the previous review period. It said that market conditions remained very similar, although arguably there was now significantly less chance of demand materialising for the product. It said that any additional investment in the PIA product should only be made in line with clear and proven new demand and not ahead of such demand materialising. It said it believed the current regulated product was fit for purpose but remained open to discussing potential changes with customers, government and other stakeholders going forward.

12.362 BT said that, at the time of launch, the derivation of the prices was fully explained to Ofcom and extensive benchmarking was carried out which showed the prices to be very favourable compared to European averages. It believed this remained the case, as BT had subsequently made substantial reductions in price following the conclusion of the 2012 LLU/WLR charge control appeal. BT noted it supported Ofcom’s decision not to introduce PIA in the 2013 BCMR and believed the logic behind this decision remained consistent and was relevant to the FAMR.

Colt

12.363 Colt considered the single most important change to the existing regulatory regime, in terms of its role in facilitating the investments that the UK required, would be for PIA to be invariant to the part of BT’s network in which any given facility may exist and not distinguish between the uses to which any instance of access is put.1053

12.364 Colt said the current approach prevented complementarities at the network level between leased lines and consumer NGA from being exploited and that considering WLA and BCMR separately could miss opportunities to align regulatory interventions to secure desired outcomes in those markets.1054

12.365 [35]1055

12.366 Colt said the present demand for PIA was low because there were too many restrictions on the product which collectively made it unworkable.1056 It said that it had provided evidence in the BCMR and that it was not reasonable for Ofcom to require specific business plans. It said it was not clear how these would be of use to Ofcom and that the product Colt was interested in was anyway quite different from PIA, in terms of use, SLAs and provisioning.1057

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EE  

12.367 EE stated that, for the reasons set out in its response to the 2013 BCMR, it continued to believe that PIA should be available for use in providing business products. It considered this change would increase competition and provide better incentives to innovate. EE considered that CPs would only be able to provide firm investment plans in light of greater certainty over how PIA would be so extended. However, EE stated that as a result of the Colt appeal it did not have any further comments on this issue in the context of the FAMR.

Geo  

12.368 Geo strongly disagreed with the restrictions on PIA, including not allowing it for backhaul, leased lines, point to point business services, mobile and fixed wireless services, and satellite. It said PIA must be extended to these services to allow CPs to design and build holistic NGA networks that were efficient and could be fully utilised.

12.369 Geo maintained that Ofcom’s “unnatural” split of PIA across WLA and the BCMR was unhelpful and unworkable for any CP considering long term investment. It said that as “broadband” service use and expectations became both more bandwidth intensive and symmetrical, it would become increasingly difficult to differentiate between the “WLA” and “BCMR” sectors.

12.370 Geo also said it did not agree with Ofcom’s assumption that there must first be concrete evidence of investment to justify imposing passive remedies. It said it believed it was most efficient to start from a presumption that deeper infrastructure investment was the most effective in promoting innovation and competition.

12.371 Geo said the most critical element to make PIA effective was to impose an EOI obligation to ensure BT offers PIA on the same basis as it provides to itself.

Sky  

12.372 Sky said that currently the efficacy of PIA was poor due to a lack of information available to third parties about BT’s ducts and poles network and capacity, and ancillary charges which greatly inflated the headline price to CPs. It said Ofcom should require BT to provide an “as built” database of its access network, which would be accessible electronically to all CPs. It also said that the current narrow constraints on the use of PIA should be relaxed to take a technology-neutral approach to include the carriage of broadband traffic delivered to both residential and business consumers by both fixed and wireless means.

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TalkTalk

TalkTalk argued that PIA deployments (as well as SLU deployments, as discussed from paragraph 12.280) faced two main problems – the very challenging viability of deploying a separate network itself, and that PIA was in practice unusable apart from in micro-deployments. TalkTalk suggested that Ofcom should consider undertaking a separate review looking at the role of PIA across different markets and setting out a clear strategy for PIA.

Verizon

Verizon said that as it had intervened in support of the Colt appeal, it offered no further comment on the subject in response to the consultation, but awaited the judgment of the appeal.

Virgin

Virgin said that the current PIA product was not working, evidenced by the lack of take-up. Virgin said that Ofcom’s invitation to supply business plans that would only be contemplated if changes were made to the remedy was a case of “placing the cart before the horse”. It said it was not appropriate to invest further time and money in drawing up specific business plans that would only be viable on the basis that speculative regulatory changes were enacted. Rather, it said a suitable framework needed to be in place before business plans were considered. It said that, while it realised that it may be equally difficult to determine an appropriate regulatory framework without any proven demand, it considered that if Ofcom wanted to ensure that PIA was given a chance of being a meaningful remedy it needed to follow a development project that would most likely sit outside of this review.

Vodafone

Vodafone said it disagreed with question 11.9 and that it considered that Ofcom had incorrectly identified common cost recovery concerns with its BCMR PIA decision (noting it was an intervener in the Colt appeal). It said that PIA should be available without usage restrictions and that it had provided Ofcom with details of its requirements for PIA in the context of the BCMR.

Vodafone said Ofcom should not frustrate mobile NGA whether it be complementary provision, rural alternative provision or generally substitutional provision and that Ofcom should remove or remedy any market barriers that prevented full NGA competition. Vodafone said that NGA infrastructure competition was so poor that even marginal substitution (such as with mobile broadband dongles) should be encouraged. It said the policy question for Ofcom was the extent to which expanding

PIA promoted this development, noting that improved backhaul costs together with the improved capabilities of LTE would help enable LTE to reach its full NGA potential.\textsuperscript{1066}

Analysis

Imposing a PIA obligation

12.378 Having carefully considered the consultation responses, we have decided to continue to impose PIA as a remedy to BT’s SMP in this market. As our assessment of the WLA market shows, the level of investment required by a third party to replicate BT’s NGA network on a sufficiently large scale to compete at this level (in the absence of regulatory intervention) is a significant barrier to entry. In the absence of requiring access to BT’s infrastructure for the purposes of providing retail NGA services, we consider that BT would have the incentive and ability to refuse access at the wholesale level thereby favouring its own retail operations with the effect of hindering sustainable competition on the corresponding downstream markets, ultimately against the interests of consumers. Therefore, we consider it appropriate to maintain the current PIA remedy to allow third party CPs to deploy their own NGA networks.

12.379 As explored from paragraph 12.11, we consider that superfast broadband will play an increasingly important role in the retail broadband market. As such, there is the potential that the demand for NGA may increase such that it supports the economics of CPs deploying their own NGA networks. PIA lowers the barriers for such deployment by reducing the cost of deployment compared to deploying a network separately from BT’s.

12.380 Further, in supporting deployment of NGA by other CPs, PIA could provide dynamic benefits as a result of it providing other CPs with more control over how to compete. This could include the deployment of fibre closer to end-users’ premises than supported by BT’s predominantly FTTC network (the availability of BT’s FTTP on Demand product notwithstanding). Further, CPs may be able to leverage any existing base of superfast broadband customers (e.g. using VULA) which could provide a stronger basis for investing in the deployment of their own NGA infrastructure using PIA.

12.381 While PIA is not currently being used for any State aid contracts, the removal of PIA would be likely to increase the barriers to non-BT CPs being able to win future State aid contracts to deploy NGA networks, as it would significantly increase the cost of physical network deployment. The retention of PIA also continues to support investment and competition (e.g. with CGA and/or Virgin) by non-BT CPs where BT is not deploying NGA, such as Virgin-only areas and by non-BT CPs using the various forms of State aid funding currently available.

12.382 Finally, PIA has been in place for only one market review period, and BT’s current pricing in place for only part of that. While the PIA product has been developed using significant BT, industry and Ofcom resources, we consider that limited additional resource would be required to support its continuation. On this basis, we consider it

\textsuperscript{1066} P.11-12, Vodafone response to the 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Vodafone.pdf.
too early to remove due to the need to allow sufficient time for business models to develop based on PIA.

12.383 We are therefore requiring PIA to be offered by BT on a UK-wide basis (excluding the Hull Area) to enable CPs to deploy NGA networks. This is consistent with our finding that BT has SMP in the UK excluding the Hull Area. We do not consider it appropriate to require PIA only where NGA has not been deployed, as one of the key reasons for PIA is to support competition with both CGA and NGA networks. However, nor do we consider it appropriate to extend the use of PIA to non-NGA deployments, such as leased lines, which we discuss from paragraph 12.400.

Pricing of PIA

12.384 We set out in the 2010 WLA Statement that prices for PIA services should be designed to cover the efficiently incurred LRIC, including a return which reflects the associated risks plus an appropriate contribution to common costs (i.e. LRIC+). This built on our approach in the Superfast Broadband Statement which concluded that prices should reflect the risk at the time the investment was made. We also set out in detail how BT might go about developing its prices and what we would do if it was unable to come to agreement with CPs.

12.385 BT subsequently produced an initial set of charges in early 2011 and then, after a process of review, put in place a set of lower charges in October 2011. As noted above, there is currently low demand for PIA. Having carefully considered the consultation responses, we also do not have evidence that it is the price of PIA itself that is the main cause of this. We further note that last year BT reduced some PIA prices following the outcome of the appeal of the 2012 Regulatory Asset Value (‘RAV’) adjustment.

12.386 We nonetheless consider that some form of price regulation is appropriate to support the obligation to provide PIA. This is on the basis that in markets where, as here, competition is not effective, there is a risk that dominant providers will set excessive prices in order to maximise their profits and, where the dominant provider is vertically integrated, to increase the costs of competing providers. Price regulation would guard against the risk of adverse price effects, such as excessively high PIA prices that undermine the effectiveness of the obligation to supply this service and/or result in higher retail prices which would be detrimental to consumers. We therefore have considered whether it is appropriate to maintain a Basis of charges condition specifying that BT’s charges should reflect its costs or whether we should instead set an explicit charge control for PIA.

12.387 Our conclusion is that it is appropriate to continue to apply a Basis of charges condition. While an explicit charge control would provide greater certainty to stakeholders, we consider that a degree of certainty about prices can still be achieved under a Basis of charges condition for PIA. In addition, the benefits of adopting an explicit charge control are likely to be limited given the very low current and expected take-up of PIA. In our view, the limited benefits of a charge control are outweighed by the drawbacks. In particular, any charge control would probably be

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1067 Cullen research indicates that BT’s pricing of monthly rental fees for ducts are amongst the lowest of eight comparable European countries (Cullen, Duct sharing – Prices, www.cullen-international.com/report/3294t2456).
more onerous to set for stakeholders and, in the absence of information about actual supply and take-up, would be dependent on forecasts (e.g. of costs, take-up) which may not be reliable, whereas a more general obligation requiring BT to set cost-reflective charges provides greater scope to reflect changes in factual circumstances during the period covered by this market review. The risk of forecast error (i.e. regulatory failure) seems particularly high in the case of PIA given the negligible current take-up of PIA.

12.388 We have considered ways in which uncertainty could be minimised under a Basis of charges condition. In particular, whether and how that condition can provide guidance about which of the costs should be reflected in PIA prices.

12.389 We consider the appropriate cost standard for PIA pricing remains LRIC plus an appropriate allowance for fixed and common costs (i.e. the LRIC+ cost standard), including a ‘risk premium’ where appropriate, such that prices can earn BT a reasonable rate of return on the basis of the expected cash flows from the investment at the time of deployment.

12.390 We also consider that the treatment of the RAV when setting PIA prices should be consistent with the approach which we have taken for the purposes of setting the LLU and WLR charge controls (see Volume 2).

12.391 We have thus put in place a Basis of charges condition for PIA where charges are reasonably derived from the costs of provision based on a forward looking long run incremental cost approach, allowing an appropriate mark up for the recovery of a fair and reasonable share of common costs including an appropriate return on capital employed, which might include a ‘risk premium’ where appropriate. This applies on an annual basis such that prices should reflect average costs in any year.

Changes to PIA

12.392 We introduced PIA in 2010 with the intention of providing opportunities to deploy NGA networks either in competition with BT’s own NGA network or where BT was not investing. However, since then we have seen virtually no use of PIA to carry out such a deployment.

12.393 We share the concerns of stakeholders that there has not been investment on the basis of PIA, noting that introducing a new regulatory remedy imposes costs on industry and a lack of use of that remedy means that those costs are not being offset by benefits to consumers as a result of investment, innovation and competition.

12.394 We note the various reasons listed by stakeholders for the lack of use of PIA, including being unable to gain economies of scope from also being able to use PIA to deploy leased lines, a lack of information on BT’s duct and pole network, general lack of usability of the PIA product, BT not consuming PIA on an EOI basis, various ancillary charges which increase the price of PIA in practice and the challenging viability of deploying a separate access network.

12.395 We consider that the last of these factors – the economics of deploying a separate access network – is particularly important in determining whether a CP will deploy a separate access network to BT’s. If it is simply too economically challenging to deploy such a network, on the basis that the expected costs (including PIA as it is currently specified and priced) over the life of the investment significantly outweigh the expected revenues, then it may be the case that even by reducing the price of PIA,
making it more attractive to use, or improving it in some other way would be unlikely to change the viability of deploying an access network. That is, the PIA product could be improved, but this would have little effect on its actual use.

12.396 If there are changes to PIA that would make investment in deploying a NGA network viable, then we would consider these. This is in part why we have sought specific investment plans from stakeholders, as these would provide an indication of the actual changes to PIA that might unlock such investment. Such information would in turn, enable us to assess, among other aspects, whether any costs associated with making those changes would be outweighed by the advantages for consumers of unlocking that investment in terms of increased investment, innovation and competition.

12.397 We note that a number of CPs argued that it was unreasonable for CPs to produce business plans based on speculative changes to a regulatory remedy and that instead we should make the changes requested first (such as addressing the issues identified in paragraph 12.394).

12.398 We recognise that producing comprehensive business plans on the basis of something that can only be made viable if changes to a regulatory remedy are actually made, may be difficult for a CP to justify. To clarify, the intention of our request has been to see plans or a business case that demonstrate quantitatively that it is possible that certain specific requested changes to PIA have the potential to unlock investment in NGA deployment, in line with our comments above. This could then form an important input into an assessment of whether the benefits of enabling that investment were likely to outweigh any costs associated with making changes to PIA.

12.399 In terms of what stakeholders submitted in response to the July 2013 FAMR Consultation, we note that [X] said it was currently investigating the effectiveness of PIA for extending fibre runs to both premises and for potential SLU in [X]. Colt provided [X] and Vodafone said it had provided its information in response to the BCMR which we note was primarily in relation to using PIA for mobile backhaul. We would invite CPs, including [X], to provide us with further details about their potential investments, the sorts of changes required to PIA to make the investment viable and the potential benefits that would arise from that investment, along the lines of that set out in paragraph 12.398.

PIA for leased lines

12.400 We acknowledge the arguments from stakeholders regarding how changes such as extending PIA to leased lines might technically contribute to the deployment of NGA (e.g. more efficient network design) or contribute in terms of a wider business case (e.g. because of increased revenue opportunities). However, we have not received evidence that this change would actually unlock investment in NGA networks (which, as set out above, would help us to determine whether the potential benefits of doing so would outweigh the potential costs). We also note that an important aspect of this would be the overall price that PIA would need to be set at to make such investments viable, as one question that may need to be answered is whether it would be

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1069 In practical terms, this could for example be contained in a spreadsheet that showed expected revenues over the lifetime from the investment, offset against the capital and on-going costs of deploying that network.
necessary to change the price of PIA if it were allowed to be used for leased lines in association with NGA.

12.401 On the specific issue of the use of PIA to deploy leased lines (i.e. independently of using it with an access network) we note that this was specifically considered in the 2013 BCMR Statement (including for mobile backhaul). In light of the evidence presented to us by stakeholders and on the basis of our analysis\textsuperscript{1070}, we decided not to impose passive remedies in markets for leased line services over the forward review period of three years.\textsuperscript{1071}

12.402 In response to Colt's comments, we note that we have considered the cross-market implications of our proposals and decisions. For example, in the 2010 WLA Review we specifically considered the implications of extending PIA to leased lines. In the 2013 BCMR we specifically asked for evidence that showed that NGA investment could be unlocked by being able to use PIA for leased line services\textsuperscript{1072} and have recently indicated in the 2014 BCMR Call for Inputs that we will consider the impact of passive remedy usage and pricing including in terms of the impact in the WLA market.\textsuperscript{1073}

**Summary of PIA conclusions**

12.403 We have decided to impose an obligation on BT to offer a PIA product on the basis of fair and reasonable terms and conditions to all CPs who reasonably request in writing such services for the deployment of access networks. This will provide CPs with a complementary alternative to VULA to offer superfast services by deploying their own NGA networks in competition with BT (or others), or to exploit areas where NGA has not, or will not, otherwise be deployed. We consider it is proportionate to maintain this remedy not least as we are not requiring BT to make changes to the product. In order to constrain PIA pricing, we have imposed a Basis of charges condition as described above.

12.404 The condition is set out in full in Annex 29.

12.405 The requirement to offer PIA and to offer it on the basis of these specific provisions is in addition to the general remedies set out in Section 10.

**Legal tests**

**Requirement to offer a PIA product**

12.406 We consider that the obligation to provide network access by means of PIA, together with such ancillary services as may be reasonably necessary for the use of those services, is appropriate and satisfies the legal tests set out in the CA03.


\textsuperscript{1071} i.e. until 2016 which is the expected timing of the next review (see paragraphs 2.42 and 2.43 of the 2013 BCMR Statement). http://stakeholders.ofcom.org.uk/consultations/business-connectivity-mr/.


12.407 Section 87(3) of the CA03 authorises Ofcom to set SMP services conditions requiring the dominant provider to provide network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

12.408 In applying this condition, we have also, as set out, taken into account the factors set out in section 87(4) of the CA03. In particular, the economic viability of CPs other than BT building alternative access networks in the absence of regulatory intervention. We consider the economic case for doing so is challenging for the reasons stated. We have also taken into account the feasibility of BT providing PIA services, noting that it already does so and is therefore in a position to continue to do so. We also consider the condition should help to ensure effective competition in the long term.

12.409 We have considered our duties under section 3 and the Community requirements set out in section 4 of the CA03. In particular, the PIA obligation is aimed at encouraging network access, thereby promoting and securing efficiency and sustainable competition and maximum benefits for customers. It will continue to enable third party CPs to compete with BT downstream with respect to CGA- and NGA-based services. We consider that NGA services are likely to be an important element of the market over the period of this review. At the same time, given the cost standard we have set out, and the allowance it makes to enable BT to make a fair return, we consider that the conditions are also consistent with the purpose of securing efficient investment.

12.410 We consider that the performance of our general duties under section 3 of the CA03 – to further the interests of citizens in relation to this sector and to further the interests of consumers in relevant markets – will also be secured or furthered by the PIA obligation through promoting competition in this upstream access market. We have also had particular regard to the desirability of encouraging the availability and use of high speed transfer services throughout the UK in setting this condition.

12.411 The obligation satisfies the criteria set out in section 47(2) of the CA03 because it is:

- objectively justifiable, in that it relates to the need to ensure that competition develops ultimately to the benefit of consumers. PIA services are aimed at stimulating competition in CGA and NGA networks. Not imposing the PIA obligation could result in BT withdrawing the existing PIA product or otherwise changing it to the detriment of any level of downstream competition;

- not unduly discriminatory, in that it aims to address BT’s market power in the relevant market, it being the only operator assessed as having SMP in that market in the UK excluding the Hull Area (and as the obligation imposed on KCOM to provide network access on reasonable request is sufficient to ensure that KCOM provides PIA services should a reasonable request be made);

- proportionate, in that the requirement is necessary, but no more than necessary, to promote competition and secure efficient investment in NGA networks for the maximum benefit of retail customers. We note that we are not requiring BT to make changes to the existing product, given that current and future expected use is low; and
• transparent, in that the obligation is clear in its intention to require BT to provide a PIA product to other CPs.

Basis of charges condition

12.412 Section 87(9)(a) of the CA03 authorises the setting of SMP services conditions imposing on the dominant provider such price controls as Ofcom may direct in relation to matters connected with the provision of network access to the relevant network, or with the availability of relevant facilities. Section 87(9)(b) further authorises SMP services conditions imposing such rules for the purposes of matters connected with the provision of network access to the relevant network, or with the availability of relevant facilities, about the recovery of costs and cost orientation. In each case, in setting such conditions, we must be satisfied that the conditions about network access pricing set out in section 88 of the CA03 are also satisfied.

12.413 We consider that the condition satisfies the requirements of section 88(1) of the CA03 as our market analysis indicates that there is a risk of adverse effects arising from price distortion. Moreover, the condition promotes efficiency and sustainable competition and provides the greatest possible benefits to end-users by enabling competing providers to buy network access at levels that might be expected in a competitive market. The extent of investment of the dominant operator has been taken into account as set out in section 88(2), as the obligation provides for an appropriate return on the capital employed to be included in the charges.

12.414 Ofcom has considered its duties under section 3 and all the Community requirements set out in section 4 of the CA03. In particular, the condition is aimed at promoting competition and securing efficiency and sustainable competition for the maximum benefit of consumers by ensuring that charges for wholesale services are set at a level that enables CPs to compete downstream. Under the network access obligations, the condition would be appropriate in order to promote efficiency and sustainable competition and provide the greatest possible benefits to end-users by enabling competing providers to buy network access at levels that might be expected in a competitive market. At the same time, given the cost standard specified, we consider that the condition is also consistent with the purpose of securing efficient investment.

12.415 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The condition is:

• objectively justifiable, in that it enables competitors to buy network access services at charges that that might be expected in a competitive market and so help them to develop competing services to those of BT in downstream markets to the benefit of consumers;

• not unduly discriminatory, in that no other operator has SMP in the relevant market of the UK excluding the Hull Area (in the case of KCOM we are not requiring it to provide PIA as a specific access remedy);

• proportionate, in that it ensures, but does no more than ensure, that BT is unable to exploit its market power, while at the same time allowing BT a fair rate of return that it would expect in competitive markets; and

• transparent in that it is clear in its intention, in particular to ensure that BT should set charges on a LRIC+ basis, as set out in this document.
Consistency with the EC recommendations and the BEREC Common Position

12.416 In developing our measures, we have taken utmost account of the NGA Recommendation, the Costing and Non-discrimination Recommendation and the BEREC Common Position. We consider that the measures are consistent with these documents. The NGA Recommendation states that, where duct capacity is available, NRAs should mandate access to civil engineering infrastructure (Recommendation 13 of the NGA Recommendation) and that NRAs should ensure that access to existing civil engineering infrastructure is provided at cost-oriented prices (Recommendation 14 of the NGA Recommendation). BP12(c) of the BEREC Common Position is to the same effect.\(^{1074}\)

12.417 Recommendation 17 of the NGA Recommendation and BP28 of the Common Position propose the creation of a database containing information on civil engineering infrastructure. However, having taken utmost account of those provisions, in absence of evidence, such as that described in 12.396 that would demonstrate a benefit that outweighs the cost, we do not consider this a proportionate requirement in the context of the WLA market.

12.418 Article 13 of the NGA Recommendation sets outs that access to civil engineering infrastructure should be provided in accordance with the principle of equivalence, while the Costing and Non-discrimination Recommendation sets out that NRAs should consider, if they believe that a non-discrimination obligation is appropriate, whether it would also be proportionate to impose EOI (Recommendation 7). Having taken utmost account of those provisions, we do not consider it proportionate to require BT to provide PIA on an EOI basis for similar reasons to why we have not applied EOI to the provision of SLU as set out in paragraph 12.303. As set out in Section 10, we consider that the no undue discrimination obligation is consistent with EOO, which Recommendation 9 sets out should be applied in the absence of EOI. Further, given the requirement for EOO, which includes requirements around comparability of functionality, we do not consider it necessary to put in place further obligations to ensure technical replicability (Recommendations 11-18).

12.419 We consider that the requirements to make available the specified ancillary services with associated pricing obligations fulfils BP16 which states that “NRAs should impose obligations with regard to the provision of co-location and other associated facilities on a cost-oriented basis under clear rules and terms approved by the regulator to support viability of the access products mentioned above”.

Alternative remedies

Introduction

12.420 In considering the remedies we are imposing on BT with respect to NGA, we have also considered whether specific access remedies other than VULA, SLU and PIA would be appropriate.

\(^{1074}\) We note that the Costing and Non-discrimination only refers to civil engineering infrastructure access (i.e. PIA) when clarifying in Article 53 that “[t]he NRA’s decision not to impose or maintain regulated wholesale access prices should not apply to civil engineering infrastructure access, whether part of the product market or imposed as an ancillary remedy”. This does not apply to our conclusions for PIA as we have in fact decided to impose a Basis of charges obligation.
Below, we consider whether to impose the following specific access remedies: unbundled fibre (‘dark fibre’), wavelength unbundling (‘WLU’), FTTC unbundling and FTTDP. After careful consideration of the consultation responses, our conclusion is not to introduce any additional specific access remedies.

Policy proposals as set out in the July 2013 FAMR Consultation

FTTP unbundling

Physical fibre unbundling

12.422 In the July 2013 FAMR Consultation we considered that this type of fibre unbundling was not a suitable remedy for the period of this market review as we considered that it was likely to be costly and impractical.

Wavelength unbundling

12.423 We proposed in the July 2013 FAMR Consultation that it would not be proportionate to impose a specific WLU access remedy as we considered that WLU was still not technically mature enough to commercially deploy on a large scale and that, in any case, the number of connections it could be used for would be limited by the small size of BT’s FTTP network.

FTTC unbundling

12.424 In the July 2013 FAMR Consultation we noted that CP demand and the precise requirements for FTTC unbundling had yet to be established, which made it difficult to assess the benefits. We did not propose to require BT to implement such a product as a specific access remedy at that stage. However, we invited interested parties to keep us updated on the progress of the SoR for FTTC unbundling.

FTTDP

12.425 In the July 2013 FAMR Consultation, we proposed that it would currently be neither appropriate nor proportionate to impose a specific access remedy on BT to require it provide access for FTTDP unbundling, as we considered it likely to be a number of years before the appropriate technologies would be mature enough for commercial deployment.

Stakeholder responses to the July 2013 FAMR Consultation

12.426 In the July 2013 FAMR Consultation, we asked:

11.10 Do you agree that we should not require BT to offer any other [specific access products?] Please provide reasons in support of your views, including, if you disagree with our approach, evidence of your likely demand (e.g. in the form of business cases or specific intention to invest) for any suggested alternative forms of network access.
12.427 [علامة] stated that it disagreed. It said the SoR for Line Renumber and Export was a requirement to minimise disruption and encourage switching in line with Ofcom’s policy preferences in the Consumer Switching review, and that it believed that it should be mandated.

EE

12.428 EE stated that its comments on PIA (see paragraph 12.367) applied equally in relation to access to dark fibre. [علامة] It said it generally supported the continuation of the obligation on BT to provide new forms of access on request, which it considered was an important way of ensuring that remedies remained current throughout the review period.

BT

12.429 BT agreed it should not be required to offer any further access remedies as part of this market review. It set out its assessment by technology.

Wavelength unbundling

12.430 BT saw no significant changes since the last review which should dictate a change of policy on wavelength unbundling. It said it was still far too early in the technology life cycle and there was no clear path to wholesale productisation that would enable it to become a viable remedy in the review period. It said significant technological breakthroughs were still required to bring these new technologies to maturity. In BT’s view, even if these were overcome, it would still not be technically viable to consider deploying systems until c.2016 at the earliest.

12.431 BT said it currently had no plans for the use of WLU using FTTP technology for the next review period, although it remained open minded on its use in the future and would continue to monitor developments. Beyond the review period, BT said WLU would represent an additional intervention in the wholesale value chain and Ofcom would need to consider carefully how it related to the VULA remedy. It said that multiple interventions could cause regulatory arbitrage and hence potentially undermine investment as well as the success of the Openreach model more generally. Finally, BT said that, given it expected FTTP roll-out to be very low volume over the review period, the potential use of WLU was further constrained by the available footprint.

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12.432 BT agreed with Ofcom’s analysis and rejection of the need for dark fibre in this market review, with the situation remaining largely the same as at the 2010 WLA Review. It noted its FTTP plans were based on Gigabit Passive Optical Network (‘GPON’) and that the overall FTTP footprint was significantly smaller than predicted at the time of the last review. It also said that unbundling at the optical splitter was likely to be costly and impractical.

Other remedies

12.433 BT also agreed with Ofcom’s findings for the other access remedies considered. It said that over time, new technological options become available and it was appropriate that in the first instance potential new product requests were dealt with through the SoR process. BT would continue to monitor progress on technology, standards and future product requirements and look to trial at an appropriate stage where there was reasonable demand and where options were operationally and commercially viable.

Geo

12.434 Geo said that CPs needed access to BT’s dark fibre on an EOI basis in order to stimulate and create effective competition in the NGA market across the UK. It said this competition currently did not exist which it considered was evidenced by the lack of other CP participation in the BDUK framework tenders. Geo said it did not consider WLU would ever be as effective a remedy as dark fibre as it was an active product and therefore did not carry the same efficiencies and competitive benefits.

12.435 Geo said CPs needed access to BT’s duct, pole and dark fibre infrastructure in order to compete with it on an equivalent basis in the market. It said it did not consider it acceptable for Ofcom to propose reasons why CPs should not have access to BT’s dark fibre but by default allow BT’s retail divisions to enjoy these inputs without restriction. It said as long as BT had exclusive access to these passive components, it would maintain a disproportionate advantage over other CPs and dominate the NGA market.

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1081 P.1, Geo response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Geo_Networks_Ltd.pdf.
Sky

12.436 Sky said that its request to BT for FTTC unbundling had been met with some resistance by BT. It considered BT had failed to engage constructively, had extended its deadlines, and said that a key element of the proposal (backhaul using separate wavelengths) was not technically or commercially viable. Sky disagreed with this as the equipment to support multiple wavelengths was very compact and would be paid for by a CP consuming FTTC unbundling.\textsuperscript{1084}

12.437 Sky noted Ofcom’s comments in relation to products that offered increased dynamic benefits, considering FTTC unbundling would allow greater investment and innovation and provide greater choice to consumers.\textsuperscript{1085} It also considered it would more completely satisfy the VULA characteristics than GEA. Sky considered FTTC unbundling reflected Ofcom’s principle of seeking to allow access and promoting infrastructure investment at the deepest point in the network that offered the opportunity for greater downstream competition.\textsuperscript{1086}

12.438 In earlier correspondence with Ofcom\textsuperscript{1087}, Sky also stated that it considered that FTTC should be a complementary product to the current FTTC GEA product, rather than a replacement for GEA, and therefore should be regulated in the same manner as GEA in terms of no price regulation being required while fibre based VULA was constrained by standard broadband.

12.439 Sky considered it extremely disappointing that, despite its persistent updates and requests, Ofcom had not proposed to require BT to provide FTTC unbundling. It considered that for it to be a viable remedy, Ofcom needed to intervene now otherwise the next opportunity would not be until the next market review.\textsuperscript{1088}

TalkTalk

12.440 TalkTalk considered that Ofcom should require Openreach to make unbundled FTTC and unbundled FTTP available as it considered that this would allow more effective competition and improve the VULA product.\textsuperscript{1089}

12.441 TalkTalk considered that FTTC unbundling would allow CPs to manage the contention rate of customers and thereby control associated costs, as well as enable CPs to design their own product/speed combinations outside of Openreach bundled GEA product pricing. TalkTalk argued that FTTC unbundling was more consistent with Ofcom’s preference for deeper competition and better met the VULA characteristics than the current GEA product. TalkTalk acknowledged that it might be

\textsuperscript{1089} Paragraph 1.2, TalkTalk response to the July 2013 FAMR Consultation - other issues, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/TalkTalk_Other_Issues.pdf.
difficult for Ofcom to be precise about the specification of the product, but argued that Ofcom should make it clear that such a product should be developed, as well as the key characteristics of the product and a roadmap for the delivery of the product.\textsuperscript{1090}

12.442 With regard to FTTP unbundling, TalkTalk considered that wave division multiplexing passive optical networks (‘WDM PON’) was the most promising solution (compared to multiple dark ‘PONs and point-to-point fibre). TalkTalk considered that it was probably currently too early to be clear about how FTTP unbundling should be achieved but considered that Ofcom should be clear that it expected FTTP to be unbundled when feasible and that FTTP networks deployed before the unbundled product being defined will need to be (re)engineered to allow the unbundled product to be offered. TalkTalk also argued that Ofcom should monitor developments relating to FTTP unbundling and require BT to publish its technology strategy.\textsuperscript{1091}

Virgin\textsuperscript{1092}

12.443 Virgin Media agreed that WLU, FTTC unbundling or FTTDP should not, at this time, be the subject of separate remedies.

Our assessment

FTTP unbundling

Physical fibre unbundling

12.444 Firstly, because of the relatively low volumes of FTTP, it would currently be difficult to justify establishing a specific process to provide for dark fibre access given the limited commercial opportunity that would result.

12.445 Second, where there is FTTP, BT has deployed a PON architecture and thus it is not clear where use of dark fibre as an access remedy would be possible in the UK.\textsuperscript{1093}

12.446 The only point in a PON architecture that physical unbundling of the fibre is possible is at the passive optical splitter. However, there is likely to be a high number of passive optical splitter locations, so the process for disconnecting/reconnecting end-user fibres would require significant manual intervention. Additionally, the addressable market would be very small with typically up to 32 connections per individual splitter (much smaller than for SLU, for example). Given these factors we consider this type of fibre unbundling is likely to be costly and impractical and we therefore do not consider this to be a suitable remedy at this time.

\textsuperscript{1090} Paragraphs 2.3-28, TalkTalk response (other issues) to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/TalkTalk_Other_Issues.pdf.
\textsuperscript{1091} Paragraphs 2.22-2.27, TalkTalk response (other issues) to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/TalkTalk_Other_Issues.pdf.
\textsuperscript{1093} A PON is a point-to-multipoint architecture based on a shared infrastructure topology. A single fibre from the exchange is shared by several end-users by means of a passive optical splitter which is deployed somewhere between the exchange and the end-users’ premises.
12.447 EE stated that its comments on PIA applied equally in relation to access to dark fibre, which we assume means that EE considers access to dark fibre should be granted to enable CPs to deploy leased lines services. Leased lines are not included in the WLA market and therefore fall outside of the scope of this review. We note that access to dark fibre was considered in the 2013 BCMR, which decided against introducing such access.

12.448 Finally, as we are not imposing an obligation to offer dark fibre to other CPs it is therefore not possible to require BT to consume dark fibre on an EOI basis.

Wavelength unbundling

12.449 WLU requires a number of individual wavelengths to be supported on the PON. These individual wavelengths could then be unbundled and allocated either on a per CP or per end-user basis. WLU would enable CPs to have dedicated bandwidth via their own wavelengths. We understand that retro-fitting WLU to BT’s PON is likely to be possible.

12.450 We note that while some stakeholders expressed favourable views of WLU, no stakeholder considered WLU should be introduced as a specific access remedy in this review.

12.451 First of all, because of the relatively low volumes of FTTP it would currently be difficult to justify establishing a specific process to provide for WLU given the limited commercial opportunity that would result. Second, we consider that WLU is still not technically mature enough to commercially deploy on a large scale. As such we do not consider that it would be proportionate to require BT to provide WLU during this market review period.

12.452 However, we recognise that standards continue to be developed and it is possible that the technical situation may have changed by the next market review. Noting [ ], and noting TalkTalk’s interest in us monitoring developments, we remain interested in hearing from stakeholders about WLU developments and the likely role and size of demand for such a product (taking into account the amount of FTTP being deployed). We would encourage BT when deploying its network to, where possible, adopt technology that enables WLU to be adopted in the future. We specifically note BT’s comments that it is open minded to the use of WLU in the future and that it would continue to monitor developments.

FTTC unbundling

12.453 FTTC unbundling, also known as SLU Bitstream, could allow a CP to rent DSLAM ports at a cabinet where BT had deployed FTTC. This could provide it with more control over the connection, including through the use of its own backhaul. As with SLU, there are a number of possible ways in which the CP could arrange backhaul to the cabinet, including self-build, PIA or renting an active or potentially passive or wavelength connection from another CP such as BT. 1094

12.454 As a starting point, we are generally supportive of products that offer increased dynamic benefits arising from a greater level of control, such as greater innovation

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1094 These are provided for example only; they do not represent an endorsement or proposal to adopt any specific approach, were such a remedy to be introduced by BT or imposed by Ofcom as a remedy.
and retail product differentiation, particularly where those benefits outweigh any
associated costs. This is part of the reason we introduced VULA, as we considered it
would offer maximum flexibility of the sort possible with LLU. And, because a number
of LLU networks were already in place, we envisaged that this would be the main
focus of competition for superfast services offered over the Openreach network.
Above all, we believed that introducing VULA would remedy BT’s SMP in the WLA
market to the benefit of consumers.

12.455 However, when introducing a new remedy, while we undertake as much as possible
to design it in such a way as to support competition, investment and overall positive
outcomes for consumers, we recognise that remedies introduced in market reviews
may not always meet the CPs’ exact requirements and that, equally, there may be
other or additional ways of remedying the competition problems in the market to the
benefit of consumers.

12.456 We therefore enable industry (including particular CPs) to develop specific products
which, through the SoR process, they can request from BT pursuant to the general
network access remedies we impose on BT. We note that FTTC unbundling is
currently the subject of an SoR. We would expect the SoR process to deliver new
product developments where the benefits outweigh the costs, however we recognise
that the SoR process may not always deliver the desired outcomes, as indicated by
stakeholder responses discussed in Section 10. Therefore it is possible that BT may
reject an SoR despite evidence of the benefits of a particular product that might
outweigh the development costs and other costs involved in the product.
Alternatively, BT might offer a price for the product which other CPs consider too
high for them to make the business case viable, which could be as a result of BT
choosing to recover additional costs directly from that product, rather than, for
example, spreading them across other products.

12.457 In these circumstances it may be appropriate for Ofcom to make an assessment and
introduce the specific access product as an SMP condition or Direction on BT. In
order to do so we would need to be satisfied that the benefits (e.g. dynamic benefits
arising from greater control or more efficient utilisation of shared assets) outweighed
the increase in total costs to industry (e.g. development costs of the product, potential
duplication of investment, lower utilisation of the BT network etc) and that the remedy
is likely to support sustainable competition. We may also need to answer the
question of how these costs should be distributed, e.g. paid only by the user of the
product or spread across other users where there may be overall benefits to
consumers.

12.458 In relation to Sky’s SoR, we note that BT has yet to make a decision on implementing
the product and therefore we do not consider it appropriate to make a formal
assessment of the costs and benefits at this time. However, we recognise that there
are potential benefits from introducing such a product and note that Sky has provided
us a note outlining some of the benefits of FTTC at a high level, relating to lower
costs and greater innovation and product development. Following BT’s decision

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1095 Noting Sky’s comment that it considered the price should be regulated in the same manner as GEA – that is,
with no price regulation required while fibre-based VULA is constrained by standard broadband.
1096 E.g. if the new arrangement resulted in higher costs of entry and had a cost curve that favours scale to the
extent that results in greater consolidation, this could result in less competition over time (or higher overall costs).
1097 Sky, Sky’s investment in alternative NGA infrastructure - SLU and UFTTC – and the potential benefits of
Ofcom enabling investment deeper in the network, 22 November 2013
on the SoR, if we were to undertake an assessment of this product we would require further evidence in order to enable us to determine whether the total benefits of FTTC unbundling outweigh the total costs. This would enable us to assess whether the combination of FTTC unbundling and VULA would result in better outcomes for consumers than VULA alone. In any event, we intend to monitor the progress and outcome of the FTTC unbundling SoR.

FTTDP

12.459 Installing FTTDP with the existing copper wire being used for the final few meters could be more cost effective than deploying fibre all the way to the premises. It is generally considered that FTTDP would be most effective when used with a developing technology called G.fast, which can be thought of as an evolution of VDSL.

12.460 We understand that a number of CPs are interested in FTTDP trials, perhaps initially using VDSL so that the physical engineering aspects can be trialled before the G.fast standard being available. We note BT’s statement that Openreach is also continuing to assess the potential for further trials of new technologies including FTTDP\textsuperscript{1098} and subsequent press reports that BT has plans to trial FTTDP alongside G.fast.\textsuperscript{1099}

12.461 It is likely to be a number of years before G.fast is technically mature enough for commercial deployment. As such we do not consider that it would currently be appropriate or proportionate to impose a specific access remedy requiring BT to provide FTTDP unbundling. However, given BT’s requirement to provide network access on reasonable request, we note that CPs could raise an SoR with BT if they wished to unbundle at alternative points to those currently available (i.e. the cabinet and the exchange).

Other

12.462 With respect to the request for Line Renumber and Export, we understand this concerns a switching issue and therefore do not consider this issue relevant to our consideration in this market review of new network access requirements to remedy BT’s SMP in the WLA market.

Summary of conclusions

12.463 For the reasons set out above, we have decided not to impose any specific access remedies further to VULA, SLU and PIA. We do not currently consider these remedies (dark fibre, WLU, FTTC unbundling, and FTTDP) to be suitable additional remedies. However, we will monitor associated developments and, if appropriate, will consider their suitability in the future, and we note that BT continues to be required to provide network access on reasonable request.

\textsuperscript{1098} Paragraph 244, \textit{BT Response to the July 2013 FAMR Consultation}, 30 September 2013, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf}.

\textsuperscript{1099} \url{http://www.ispreview.co.uk/index.php/2013/10/bt-confirm-uk-plan-trial-1gbps-capable-g-fast-fftdp-broadband.html}, accessed 16/12/2013.
Consistency with the EC recommendations and the BEREC Common Position

12.464 After taking utmost account of the NGA Recommendation in this section, and for the reasons set out above, we have decided not to implement the following provisions as part of the obligations on BT:

- providing access to the terminating segment in the case of FTTH (notwithstanding Recommendations 18-20 of the NGA Recommendation);
- unbundled access to the fibre loop (notwithstanding Recommendations 22-28, in particular Articles 22 and 23, of the NGA Recommendation), including fibre backhaul for SLU where appropriate (notwithstanding Recommendation 29 of the NGA Recommendation and BP 13 of the BEREC Common Position); and
- providing multiple fibre lines in the terminating segment when deploying FTTH (notwithstanding Recommendation 21 of the NGA Recommendation).

12.465 In particular, as we set out 12.446, we consider that unbundling BT’s GPON network (either of the terminating segment, notwithstanding Recommendations 18-20 or the entire fibre loop, notwithstanding Recommendation 22 and 23) would be unlikely to support effective competition. This is due to significant cost disadvantages, the impracticality of physically unbundling a GPON (in the case of unbundling the entire fibre loop) and the limited footprint of BT’s FTTP network. We addressed fibre backhaul for SLU in paragraph 12.344 above.

12.466 On multi-fibre deployments, we stated in the 2010 WLA Statement that we were not aware of any firm demand from paying CPs for spare fibre and that the absence of any firm demand suggests that there is a significant risk that such a deployment would be inefficient. We do not have any specific evidence that this position has changed, noting that no respondents to the consultation indicated any demand for such a specific access product. For the same reasons set out in the 2010 WLA Statement, we consider that imposing such an obligation could dis-incentivise investment, adding costs without accompanying benefits. We do not have evidence to suggest that these issues (including the level of demand) are likely to change materially over the course of the review period.

12.467 In all the circumstances, therefore, it does not appear to us that imposing the measures listed above would be likely to promote investment, competition and innovation in line with the aims set out in Article 1 of the NGA Recommendation.

1100 BT’s chosen technology means that passive optical splitters are likely to be located close to or at the distribution point, meaning each would cover an even lower number of customers than SLU at the cabinet, while there is a high cost to manually unbundling a large number of splitters.

Section 13

Remedies: WLA current generation access

Introduction

13.1 In Section 7 we set out our conclusion that BT has SMP in the market for WLA. In Section 10 we set out general remedies which we are applying in this market and in Section 12 we set out specific access remedies on BT concerning NGA products. In this section we set out our decisions for specific access remedies on BT with respect to CGA products in the WLA market. We set out our full cost analysis and detailed charge controls in summary in Section 16 and in detail in Volume 2 of this Statement. The pricing decisions for TRCs and SFIs, which are ancillary services in the WLA market (among others), are set out in Section 18.

13.2 As discussed in Section 10, we consider that imposing specific network access remedies on KCOM in the same form as BT, in the absence of clear evidence of demand in the Hull Area for the particular access products currently supplied by BT, to be disproportionate and inappropriate at this time. We consider that opportunities for competition are best met by continuing to rely instead on the general network access obligations we set out in Section 10.

13.3 In this section, we set out our decisions to impose:

- a specific access remedy on BT in the form of a requirement to offer LLU services, including ancillary services necessary to enable and support the provision of LLU;
- a charge control on BT for certain LLU services; and
- a Basis of charges obligation on BT for electricity charges for LLU services.

13.4 We also describe our policy as to what we expect to include in the cost accounting Direction for the WLA market made under our cost accounting condition.

Requirement for BT to provide Local Loop Unbundling

13.5 LLU is a remedy that requires BT to allow CPs to partly or wholly rent a customer’s local ‘copper’ access connection so that they can provide voice and/or data services directly to end-users using their own equipment, which they deploy in BT’s exchanges.

Impact of LLU

13.6 LLU provides CPs with greater control of their communication services, providing them with a significant ability to innovate and to differentiate their products from BT. This enables CPs to potentially support a broader range of applications, products and services than if they had less control. It is the additional control and flexibility provided by LLU that offers increased benefits over resale products.

13.7 LLU can be in the form of either MPF or SMPF, which provides a CP with the choice to provide either voice and broadband or just broadband services to end-users. In
addition to the core access products, a number of ancillary services are necessary to enable and support the provision of LLU, including tie cables, site access, space, and power.

13.8 LLU has resulted in positive outcomes for industry and consumers alike. There has been increased take-up of wholesale access products, with CPs deploying their own networks in competition with BT, changing the competitive landscape in fixed telecommunications services. Consumers have increasingly adopted fixed broadband services, benefited from greater choice and more affordable packages of fixed telecommunications services, and as a result have derived greater satisfaction from those services.

13.9 As at September 2013, almost \( \times \)% of UK premises were served from an exchange where LLU is being used.\(^{1102}\) In these areas there are now at least two CPs (including BT) which are able to provide LLU-based products and which are in direct competition with each other for fixed telecoms services. CPs have taken advantage of the opportunities offered by LLU and have invested in networks to provide services to consumers in downstream markets. The take-up of these LLU-based services has grown from just over 210,000 lines in Q4 2005\(^{1103}\) to over \( \times \) as of September 2013.\(^{1104}\)

13.10 The major CPs have indicated potential plans for some additional LLU deployment over the market review period, although the rate at which CPs are expanding their LLU footprint is anticipated to be relatively slow compared to previous periods.\(^{1105}\) This reflects the high percentage of premises already covered, and that the remaining exchanges are likely to service a lower number of premises and/or be characterised by higher connection costs (e.g. more remote exchanges).

13.11 The level of take-up of LLU services is likely to remain strong over the market review period – even as the number of NGA connections increases (which in some cases is sold in combination with MPF).

Policy proposals as set out in the July 2013 FAMR Consultation

13.12 In the July 2013 FAMR Consultation, we proposed retaining the requirement on BT to provide LLU services. Our view, as set out in the July 2013 FAMR Consultation, was that the likely impact on BT of retaining the existing remedy would be limited and that retaining the requirement to provide LLU would promote competition in the supply of fixed telecommunications services, which would be of benefit to consumers.

13.13 In the July 2013 FAMR Consultation, we asked:

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\(^{1102}\) Ofcom calculations based on BT response to question 1 of the s.135 notice of 14 October 2013 and Virgin response to question 1 of the s.135 notice of 19 November 2013 (sent for the 2014 WBA Review).

\(^{1103}\) Figure 3.4, The Communications Market 2006, July 2006, http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cm06/.

\(^{1104}\) Ofcom calculations based on BT response to Q.1 s.135 notice of 14 October 2013 and Virgin response to Q.1 of the s.135 notice of 19 November 2013 (sent for the 2014 WBA Review).

\(^{1105}\) These plans are further discussed in Section 4 (geographic market definition) of the 2014 WBA Statement (Ofcom, Review of the wholesale broadband access markets – statement, 20 May 2014, http://stakeholders.ofcom.org.uk/consultations/review-wba-markets/draftstatement/).
12.1 Do you agree with our proposal to continue to require BT to provide LLU? Please provide reasons in support of your views.

Stakeholder responses to the July 2013 FAMR Consultation

13.14 BT said that LLU would continue to be significant in ensuring continued competition for broadband services in downstream markets, and that there were no market developments that would suggest a change to this remedy was required.\(^{1106}\)

13.15 EE\(^{1107}\), [\(\_\_\_\_\)\(^{1108}\) and Virgin\(^{1109}\) agreed that BT should be required to continue to provide LLU.

13.16 Vodafone said that LLU continued to be an important product with a lifetime of many years to come, and that LLU supported both voice, broadband, and EFM services.\(^{1110}\)

Analysis including Ofcom response to stakeholder responses

13.17 Our assessment of the WLA market shows that the level of investment required by a third party to replicate BT’s CGA network on a sufficiently large scale to compete at this level is a significant barrier to entry. In the absence of an obligation requiring BT to provide LLU, we consider that BT would have the incentive and ability to refuse to supply LLU or otherwise change it to the detriment of LLU users, and thereby favour its own retail operations with the effect of hindering sustainable competition in the corresponding downstream markets, ultimately against the interests of end-users. This would increase entry barriers, CPs’ existing investments could be unwound, and planned LLU investments could be withdrawn. Therefore we consider that a LLU remedy requiring BT to make available a product which allows other CPs to compete with BT’s downstream businesses is necessary to directly address BT’s SMP in the WLA market.

13.18 We note that the existing set of LLU services, including ancillary services, has been developed and refined by BT and industry over a number of years, involving significant time, effort and investment, and are currently not the subject of significant contention.

13.19 In our view, the impact on BT of retaining the existing remedy is therefore likely to be very limited. Supplying LLU requires ongoing resource from BT, but we do not consider this to have a great impact on BT (and note that BT did not argue for the removal of this obligation).

13.20 We consider that a wholesale remedy requiring BT to provide LLU will achieve our aim as it reduces the entry barriers for those CPs wishing to provide telecommunication services to consumers based on LLU and makes it more likely

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\(^{1107}\) P.17, EE response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.

\(^{1108}\) [\(\_\_\_\_\)\]


that BT will maintain an appropriate set of product standards. It is therefore beneficial to CPs to keep the existing LLU requirement, providing certainty in respect of their existing (and any future) investment in LLU products.

13.21 Accordingly, we continue to consider that a requirement on BT to provide LLU will promote competition in the supply of fixed telecommunications services. It will benefit consumers in terms of increased choice of provider and a wider range of products with improved quality of service and better value for money. We note that stakeholders specifically argued for LLU to continue to be required as a remedy.

Final policy conclusion

13.22 For the reasons set out above in paragraphs 13.17 to 13.21, we have decided to require BT to offer LLU services, including ancillary services necessary to enable and support the provision of LLU, in the WLA market in the UK excluding the Hull Area.

13.23 The obligation to provide LLU is on the basis of fair and reasonable terms and conditions (and in some cases, charges), in line with the requirement to provide network access on reasonable request as set out in Section 10.

13.24 The condition is set out in full in Annex 29.

Legal tests

13.25 We consider that the obligation to provide LLU services, together with such ancillary services as may be reasonably necessary to enable and support the provision of LLU, is appropriate and satisfies the legal tests set out in the CA03.

13.26 Section 87(3) of the CA03 authorises Ofcom to set SMP services conditions requiring the dominant provider to provide such network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

13.27 In setting this condition, we have also taken into account the factors set out in section 87(4) of the CA03. In particular, when considering the economic viability of CPs building alternative access networks that would make wholesale access to LLU unnecessary, we are of the view that this is unlikely given the costs involved and the transition from CGA to NGA networks. Further, we consider that it is entirely feasible for BT to be required to provide LLU services in light of their very widespread existing provision. We consider the condition should also continue to help ensure that the need to secure effective competition in the long term is met.

13.28 We have also considered our duties under section 3 and the Community requirements set out in section 4 of the CA03. In particular, we consider that the condition furthers the interests of citizens in relation to communications matters and furthers the interests of consumers in relevant markets in line with section 3 of the CA03 by encouraging competition in retail services.

13.29 We also consider that the condition meets the requirements set out in section 4 of the CA03. As noted above, the condition is aimed at encouraging network access, thereby promoting and securing efficiency and sustainable competition and the
maximum benefit to customers of communications providers. It will continue to enable CPs to compete effectively with BT in downstream broadband and narrowband markets with respect to CGA services. We consider that these services will remain very important in this market over the forward looking period of this review.

13.30 The condition satisfies the criteria set out in section 47(2) of the CA03 because it is:

- objectively justifiable, in that it relates to the need to ensure that competition develops ultimately to the benefit of consumers. LLU services are aimed at stimulating competition in the provision of broadband and telephony services and enhancing competition in areas of limited local access competition. Removing the condition could result in BT withdrawing the product or otherwise changing it to the detriment of the existing level of effective downstream competition;

- not unduly discriminatory, in that the condition aims to address BT’s market power only in the market in which we find it has SMP (namely, the UK excluding the Hull Area). As noted earlier, while we find KCOM to have SMP in the WLA market in the Hull Area, we consider that imposing specific network access remedies on KCOM in the absence of clear evidence of demand to be disproportionate and inappropriate at this time (rather we consider that the obligation imposed on KCOM to provide network access on reasonable request is sufficient to ensure that KCOM provides LLU services should a reasonable request be made in the Hull Area);

- proportionate, in that the requirement is necessary, but no greater than necessary, to promote efficiency and sustainable competition for the maximum benefit of customers of communications providers, but as discussed above is not unduly burdensome on BT (taking account of the fact that BT already supplies this service); and

- transparent, in that it is clear in its intention to require BT to provide LLU services to CPs and its intended operation should also be aided by our explanations in this document.

**LLU pricing approach**

**Policy proposal as set out in the July 2013 FAMR Consultation**

13.31 In the July 2013 FAMR Consultation, we proposed to continue to impose an LLU charge control as we considered that, in the absence of any such control, BT would have the ability and incentive to price at an excessive level, which could risk excessive prices for consumers and inhibit downstream competition.

13.32 As we considered that an appropriately designed charge control would be sufficient for addressing our competition concern, namely excessive pricing, we provisionally concluded in the July 2013 FAMR Consultation that an additional Basis of charges obligation would be unnecessary and disproportionate.

13.33 In the July 2013 FAMR Consultation, we asked:

| 12.2 | Do you agree with our proposal to continue to apply a charge control on LLU? Please provide reasons in support of your views. (Comments on the specifics of the charge control should be made in response to the forthcoming 2013 LLU WLR Charge Control Consultation.) |
Stakeholder responses to the July 2013 FAMR Consultation

LLU charge control

13.34 EE said it agreed with the proposed approach for the reasons set out in the FAMR Consultation, subject to its views on the importance of a parallel Basis of charges obligation.\(^{1111}\)

13.35 Sky\(^{1112}\), Virgin\(^{1113}\) and Vodafone\(^{1114}\) all agreed with our proposal to impose a charge control to address the risk of excessive pricing.

Basis of charges

13.36 Sky disagreed with the proposal not to impose a Basis of charges obligation and was concerned that the imposition of a charge control without cost orientation may not prevent BT from setting excessive pricing for certain products within a charge control basket – it considered that charge control sub-caps would not provide protection from excessive pricing of individual products. It also continued to believe that cost orientation would provide a safeguard to cover any interim period between the end of one charge control and the beginning of the next charge control.\(^{1116}\)

13.37 Virgin said it was concerned that removing the market wide cost orientation remedy (and carving out the application of ‘fair and reasonable’ charging) in respect of products that were subject to a charge control was a fundamental change of position from the 2010 review, but that there was no evidence of a material change in the market which suggested a change in approach was needed. Virgin went on to say that our proposed approach offered substantially less protection than previously existed in this market, despite our proposed approach to using sub-caps as part of the LLU charge control. In particular, it was concerned that this approach would no longer protect against both high and low prices (cross-refering specifically to its concerns on GEA pricing as an example). It felt that the proposed charge control only guarded against the risk of excessive pricing on an aggregate level depending on the breadth of the sub-cap, and/or fair and reasonable (which it considered was an untested and unknown remedy in the context of a specific price control remedy).\(^{1117}\)

Analysis including Ofcom’s response to stakeholder responses

13.38 We first consider whether it is appropriate to continue to impose a charge control that would set prices for the period of the market review. Having set out these

\(^{1111}\) P.17, EE response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.
\(^{1113}\) [\(\times\)].
\(^{1116}\) Paragraphs 2.5-2.6, Sky response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Sky.pdf.
considerations, we then discuss whether we should further impose a Basis of charges obligation alongside a charge control.

**LLU charge control**

13.39 The aim of a charge control is to prevent excessive pricing (i.e. pricing above the competitive level). We believe that a well designed charge control which sets charges within a basket so that they are constrained to a reasonable level of cost will achieve this aim. Moreover, we also consider that a charge control will continue to provide certainty and transparency with regard to charges over the course of the charge control period, particularly as a charge control will allow charges to be set in advance. It will also act as a constraint in the downstream WBA market.

13.40 The identification of the risk of excessive pricing is a necessary precondition under section 88 of the CA03 to enable us to set an SMP condition imposing a charge control. That risk arises here because, as our analysis of the WLA market shows, in the absence of any such control, BT would have the ability and incentive to price at an excessive level leading to excessive prices for consumers and inhibiting downstream competition. A charge control addresses this risk and protects consumers. We note that, overall, no stakeholder specifically argued in the July 2013 FAMR Consultation for the removal of the LLU charge control.

13.41 We have therefore decided that a charge control on BT for LLU, including certain ancillary services, is appropriate. We set out our full cost analysis and specific pricing approach that demonstrates how the controls are sufficient to prevent excessive pricing for individual charges in summary in Section 16 and in detail in Volume 2 of this Statement, including through the use of sub-caps. We consider that our approach to the form, level and structure of the LLU controls addresses our concerns in the WLA market of a relevant risk of adverse effects arising from a price distortion if BT fixes and maintains its prices at an excessively high level for LLU services. These controls are aimed at ensuring that charges are constrained to an appropriate level, while at the same time ensuring that BT is able to recover its efficient costs. As a result, we consider that the charge control is designed in a proportionate way such that it does not produce any adverse effects which are disproportionate to our competition concern. Therefore, on this basis, we also consider that a charge control is the most proportionate remedy to achieve the aim of addressing the risk of BT realising its ability and incentive to engage in excessive pricing in this market.

**Whether to impose an additional Basis of charges obligation**

13.42 Having set out our considerations on the need for a LLU charge control, we now turn to the question of whether we should have a Basis of charges obligation in addition to the charge control for the purposes of constraining prices within the basket.¹¹¹⁸

13.43 We note Virgin’s comments about our approach offering less protection than afforded in previous reviews. We recognise that Ofcom has a duty to have regard to the need for consistency in our regulatory decisions; however, in considering remedies in any market review we must impose such remedies that are appropriate and proportionate to the competition concerns identified. We have already explained above why we

consider that the LLU charge control is the most effective and proportionate remedy
to address our competition concern of excessive pricing. We have not identified the
risk of excessively low pricing as a competition concern as part of this review for LLU
services (Virgin’s concerns in relation to low pricing for NGA services are addressed
in Section 12).

13.44 Given that we consider that an appropriately designed charge control, constraining
prices but allowing for the recovery of efficiently incurred costs, is effective and
proportionate to address our competition concern, we take the view that the
imposition of an additional Basis of charges obligation would be unnecessary and
disproportionate. Further, as we explain in more detail in Section 10, we do not
consider a fair and reasonable obligation is necessary where a charge control is
imposed and is sufficient to address our competition concerns. We note stakeholders’
concerns around the design of the charge control, and so we also set out in more
detail in Volume 2 how the design of our charge control results in a Basis of charges
obligation being unnecessary, including through the use of sub-caps.

13.45 It is also worth noting that, as LLU is an established product with certainty over
volumes, we are able to set an *ex ante* price with a sufficient degree of confidence.
Moreover, we consider the charge control with sub-caps provides greater pricing
certainty and transparency over the course of the charge control period than a Basis
of charges obligation would, particularly as prices will be set in advance, whereas (at
best) actual costs under a Basis of charges obligation would be known to CPs only
with a lag in time.\(^\text{1119}\)

13.46 With respect to Sky’s point that Basis of charges obligations could provide some
constraint on charges after charge controls expire, it is preferable to align the
implementation of new charge controls with the expiry of existing controls. However,
we note that in any event the expiry of the charge control would mean that the
requirement for fair and reasonable charges would apply, which would provide
protection in the interim period.

**Final policy conclusion**

13.47 For the reasons set out above in paragraphs 13.38 to 13.46, we continue to
impose a charge control on LLU services as we consider that, in the absence of any
such control, BT would have the ability and incentive to price at an excessive level,
leading to excessive prices for consumers and inhibiting downstream competition.
We do not, however, impose an additional Basis of charges obligation as we are of
the view that a well designed charge control, which sets charges so that they are
constrained to a reasonable level, would be sufficient to prevent BT from setting
excessively high prices.

13.48 We set out our full cost analysis and detailed charge controls in summary in Section
16 and in detail in Volume 2 of this Statement.

\(^{1119}\) We also set out more detail in Section 4 of Volume 2 on how the design of the charge control allows pricing
certainty and transparency, but without the need for additional imposition of an addition Basis of charges
obligation.
Legal tests

13.49 For the reasons set out in Section 19, we are satisfied that the charge control condition for BT on LLU services meets the tests set out in the CA03.

Pricing approach for electricity services

13.50 CPs buy electricity from BT to provide power to the equipment used for LLU. The price which BT charges CPs for electricity is to a large extent based on the wholesale price that BT itself is charged for electricity. The remainder of the price is an allocation of common BT network costs.

13.51 BT’s charges for electricity have fluctuated, reflecting variations in the prices at which it buys electricity. Table 12.1 illustrates these fluctuations since February 2007.

<table>
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<th>Operative date</th>
<th>Charge £</th>
<th>Excl. VAT</th>
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<tr>
<td>10/11/2008 - 31/03/2009</td>
<td>0.0968</td>
<td></td>
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<tr>
<td>01/04/2009 - 31/12/2009</td>
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<td>0.0862</td>
<td></td>
</tr>
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<td></td>
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<td></td>
</tr>
<tr>
<td>01/04/2014</td>
<td>0.1237</td>
<td></td>
</tr>
</tbody>
</table>

Source: BT price list

13.52 We decided in the 2012 LLU WLR Charge Control Statement that electricity should remain outside the scope of the charge control, but remain subject to the general remedies (including Basis of charges) set in the 2010 WLA Statement. We considered that a charge control on electricity charges would not be appropriate, largely because of the volatile nature of the wholesale price that BT pays, but also because a charge control on the very low allocation of common costs in BT’s electricity charge would be over prescriptive and disproportionate.\textsuperscript{1120}

\textsuperscript{1120} In the 2011 LLU WLR Charge Control Consultation (paragraph 4.134) we said that BT revenues for the mark up element of LLU electricity were £[\ldots]. See Ofcom, LLU Charge Control – Further consultation, 23 November 2011, http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc/summary/condoc.pdf.
Policy proposals as set out in the July 2013 FAMR Consultation

13.53 In the July 2013 FAMR Consultation, we proposed a Basis of charges obligation that requires BT to set electricity charges that are derived from its relevant electricity buy costs plus a small mark-up to reflect its own internal costs related to electricity purchasing and electricity charge setting. We also proposed that it would be appropriate to use a FAC based approach rather than ‘FAC+’.

13.54 In the July 2013 FAMR Consultation we asked:

12.4 Do you agree with our proposed approach, including on pricing, for electricity? Please provide reasons in support of your views.

Stakeholder responses to the July 2013 FAMR Consultation

13.55 BT agreed that it was inappropriate to put a charge control on electricity prices, given the volatile nature of these costs and the risk of regulatory failure. It said that it was in BT’s interest to secure an efficient level of electricity price and the same price will be passed onto external CPs.1121

13.56 BT agreed that it should be allowed to recover its efficiently incurred costs in the provision of electricity on top of the electricity price, and that these costs should include all of BT’s fully allocated costs (including a return on capital employed).1122

13.57 [ ] agreed with our proposals and that a charge control would be disproportionate given the volatility of input costs (unless BT was able to procure a 3 year fixed term wholesale contract). It said an overall Basis of charges was a reasonable compromise.1123

13.58 TalkTalk broadly agreed with our proposal. It said the reasons for constraining BT’s prices were compelling because BT had SMP, electricity services were wholly uncontestable, and the level of common costs for these services were low meaning that the need for price flexibility to achieve allocative cost efficiencies was minimal. 1124

13.59 Virgin accepted that where there was clear evidence of BT incurring input costs (e.g. electricity costs) and such costs could be passed through with minimal addition of network common costs, such a charge was more suitable to stricter regulation such as a FAC type condition. It also felt that, if there were only minimal common costs added to the pure input cost of electricity, any ‘+’ would logically be set as a small factor.1125

Analysis including response to stakeholder responses

13.60 Where competition cannot be expected to provide effective constraints, there is a risk of excessive pricing derived from the dominant provider’s ability and incentive to price at an excessive level, inhibiting the development of effective competition in downstream markets and/or leading to excessive prices for consumers. The identification of that risk is a necessary precondition under section 88 of the CA03 to enable us to set an SMP condition.

13.61 For the reasons set out above, we consider that BT’s SMP means that CPs have no option but to buy electricity services from BT. Therefore, given that the provision of electricity services is not open to competition from the market, BT has both the incentive and ability to price electricity services above the competitive level, i.e. there is a risk of excessive pricing by BT. We therefore consider that some form of pricing protection is required in order that downstream competition is not inhibited. Our objective is that the prices for these services should reflect an appropriate level of cost.

13.62 We consider that a charge control on electricity charges would continue to be inappropriate. The principal reason for this view is the volatile nature of electricity purchase costs. A charge control therefore carries undue risk of regulatory failure, i.e. of the charge being set at an inefficient level, whether too high or too low. We also consider that, given the very low allocation of common cost in BT’s electricity charge, a charge control may be over-prescriptive and disproportionate.

13.63 An alternative remedy to address our concerns is a Basis of charges obligation that sets out a specific measure of costs that should be applied. We note that stakeholders broadly agreed with our proposed Basis of charges obligation. Our view continues to be that it is appropriate to apply a Basis of charges condition which requires BT to set electricity charges that are derived from its relevant electricity purchase costs plus a small mark-up to reflect its own internal costs related to electricity purchasing and electricity charge setting. Unlike a charge control, this option does not carry the same risk of regulatory failure as mentioned above given that BT would have more flexibility to vary charges in line with changes in costs.

13.64 We have again considered whether a FAC+ based approach would be appropriate for electricity charges to allow for the uncertainty involved in setting prices before costs are fully known. We understand that BT buys electricity under fixed price contracts, that it does not make spot market purchases and that it reviews the level of electricity revenues and costs on a quarterly basis. Given this, we consider it reasonable that over the course of a year BT is able to ensure that its revenues from electricity sales are in line with its costs.

Final policy conclusion

13.65 We have decided to impose a Basis of charges obligation that requires BT to set electricity charges that are derived from its relevant electricity purchase costs plus a small mark-up to reflect its own internal costs related to electricity purchasing and electricity charge setting. This obligation will use a FAC based approach.

1126 Including a return on the (likely small) amount of capital employed.
Legal tests

13.66 We consider that the Basis of charges condition meets the tests set out in the CA03.

13.67 Section 87(9)(a) of the CA03 authorises the setting of SMP services conditions imposing on the dominant provider such price controls as Ofcom may direct in relation to matters connected with the provision of network access to the relevant network, or with the availability of relevant facilities. Section 87(9)(b) further authorises SMP services conditions imposing such rules as they make for the purposes of matters connected with the provision of network access to the relevant network, or with the availability of relevant facilities about the recovery of costs and cost orientation. In each case, in setting such conditions, we must be satisfied that the conditions about network access pricing set out in section 88 are also satisfied.

13.68 We consider that the condition satisfies the requirements of section 88(1) as our market analysis indicates that there is a risk of adverse effects arising from price distortion. Moreover, the condition promotes efficiency and sustainable competition and provides the greatest possible benefits to end-users by enabling competing providers to buy network access and supporting ancillary services at levels that might be expected in a competitive market. The extent of investment of BT has been taken into account as set out in section 88(2), as the obligation provides for a mark-up for an appropriate return on capital employed.

13.69 We have also considered our duties under section 3 and all the Community requirements set out in section 4 of the CA03. In particular, the condition is aimed at promoting competition and securing efficiency and sustainable competition for the maximum benefit of consumers by ensuring that charges for wholesale services are set at the level of costs. For those reasons, we also consider that the condition would be appropriate in order to promote efficiency and sustainable competition and provide the greatest possible benefits to end-users by enabling competing providers to buy network access and supporting ancillary services at levels that might be expected in a competitive market. At the same time, given the cost standard we have set out, and the allowance it makes to enable BT to make a fair return, we consider that the conditions are also consistent with the purpose of securing efficient investment.

13.70 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. In our view, the condition is:

- objectively justifiable, in that the condition is required to address the risk that electricity charges are likely to be priced above the competitive level in the absence of such a condition;
- not unduly discriminatory, in that we have found that BT is the only operator with SMP in the relevant market of the UK excluding the Hull Area and we are not requiring KCOM to provide LLU as a specific access remedy;
- proportionate, in that it will ensure, but do no more than ensure, that BT is unable to exploit its market power, while allowing a fair rate of return that it would expect in competitive markets; and
- transparent, in that it is clear in its intention, in particular to ensure that BT should set charges for electricity services as set out in this document.
**Cost accounting**

**Policy proposals as set out in the July 2013 FAMR Consultation**

13.71 In the July 2013 FAMR consultation we proposed cost reporting in the RFS for LLU CGA services on a FAC basis. We proposed that we would no longer require the reporting of DLRIC and DSAC as CPs no longer needed these to monitor compliance with a Basis of charges obligation, but proposed that BT should maintain this data as required by the cost accounting condition.

13.72 Specifically in relation to electricity services, we proposed that BT should provide certain information to Ofcom to comply with our FAC based, Basis of charges proposal.

**Stakeholder responses to the July 2013 FAMR Consultation**

13.73 BT welcomed our proposal to remove the publication of DLRIC and DSAC information. It said that our proposal was consistent with decisions we made in other recent market reviews such as the 2013 BCMR Statement and 2013 NBMR Statement, but questioned the proposal to maintain such data and said we must explain how the data would be used. BT also questioned the need for aggregated FAC information to be published.1127

13.74 Virgin disagreed with the proposal to remove the requirement for BT to publish LRIC in its RFS, and with our statement that the absence of cost orientation as a remedy meant that it was unnecessary for BT to publish LRIC data for the following reasons:

- LRIC data was potentially highly relevant for stakeholders to have confidence that charges were ‘fair and reasonable;’

- LRIC data continued to be of key importance to ensure that stakeholders had confidence in BTs compliance with the LLU and WLR charge controls, given the differential between charges set for MPF and WLR+SMPF was specifically set at LRIC, with SMPF set at LRIC (i.e. that the MPF and WLR differential requirement was being complied with); and

- there was minimal incremental effort required to publish the data and as such the proportionality test of imposing a publication requirement should have a low threshold.1128

13.75 [ ] agreed with the proposals but questioned why we were limiting our proposals to the publication of FAC.1129

13.76 BT agreed that it should provide Ofcom with its methodology for calculating electricity charges and submit to Ofcom a statement that it has complied with that methodology. It said that this could be presented in the RFS; however, to retain commercial

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1127 Paragraph 382, BT response to the July 2013 FAMR Consultation, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf).


1129 [ ]
confidentiality, no figures would be included within that statement as purchase costs were confidential and it was unclear as to what other information could be reported that would not be commercially sensitive.\textsuperscript{1130}

### Analysis including response to stakeholder responses

13.77 We have published the 2014 Regulatory Financial Reporting Statement\textsuperscript{1131}, setting out our revised cost accounting condition. We will subsequently be issuing cost accounting Directions pursuant to the Regulatory Financial Reporting Statement setting out the form of reporting for the RFS. We describe here our policy as to what we expect to include in the cost accounting Direction. There are two broad elements to this: we first set out our policy analysis with respect to cost accounting for WLA at the charge control level, and then discuss the service level cost accounting requirements for WLA CGA services (including LLU charge controlled services and electricity services\textsuperscript{1132}).

13.78 In relation to the former, we believe it is appropriate for BT to be required to maintain FAC data for WLA at the charge control level, and for this cost data to be reported in the RFS. By this we mean the maintenance and publication of total FAC for each charge control, so if the associated charge control is a basket design then the reported FAC should also be for the total basket, and if it is a single product charge control then the reported FAC should also be for the individual product. Although BT questioned the need for this data, we consider that trends in profitability at this level are informative in the context of considering the effectiveness of remedies as a whole, and that FAC information at this level also provides transparency for stakeholders (including how BT has allocated costs across different baskets or single controls). We see this as facilitating stakeholder confidence that such costs have been allocated consistently. It also mitigates against the risk of double recovery of costs or that costs might be unreasonably loaded onto particular charge controls.

13.79 At the service level in the WLA market, we consider that it is appropriate for BT to be required to maintain FAC, DLRIC and DSAC for CGA LLU services despite BT’s query about the need for this. This is because we consider that this data is necessary in the context of considering the effectiveness of remedies, provides transparency regarding how BT has allocated costs across regulated services, and mitigates against the risk of double recovery of costs or that costs might be unreasonably loaded onto particular services. However, we do not consider it necessary for this data to be published (despite \textsuperscript{1132} argument to the contrary), as without a separate Basis of charges obligation on services that are separately charge controlled (e.g. in this case, LLU), CPs no longer need this data to monitor compliance with this obligation. This is consistent with our approach and reasoning in other recent decisions where we have removed Basis of charges obligations.\textsuperscript{1133}

\textsuperscript{1130} Paragraph 385, BT response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.


\textsuperscript{1132} Note, we set out our cost accounting policy for TRCs and SFIs in Section 18.

13.80 With respect to Virgin’s argument that LRIC data should be published for charges which are ‘fair and reasonable’, we have set out our view in Section 10 that it is not necessary or appropriate to provide further guidance as to what is meant by ‘fair and reasonable’ in the context of either charges for existing services (i.e. other than those wholesale inputs for which we have decided to impose specific pricing remedies e.g. charges control) or such services which are yet to exist. This is because we consider that the application of this requirement is fairly limited given that most services within the markets in this review, including LLU, have a specific pricing remedy imposed. Therefore, while we acknowledge Virgin’s argument that the incremental effort required to publish LRIC is “minimal”, a requirement to publish information (for example on a LRIC basis) for such services is nonetheless an additional burden, and one which we consider unnecessary and inappropriate in light of our remedies in this market.

13.81 We also disagree with Virgin’s proposal for LRIC data to be published to ensure BT’s compliance with the LLU and WLR charge controls. We have set the LLU and WLR charge controls such that the difference between WLR+SMPF and MPF will be equal to our estimate of LRIC by 2016/17. Stakeholders do not need to see BT’s LRIC data to know whether BT is complying with its obligations, as they only need to know whether BT is complying with the charge controls. We consider there would be little value for stakeholders in requiring BT to report the LRIC differentials, as our estimates of the LRIC differentials were materially different to BT.

13.82 For Electricity, we note that the purchase costs which underpin the Electricity charge may be confidential and commercially sensitive as they relate to charges negotiated by BT with its energy suppliers. Where this is the case, we do not expect these to be published. However, we would aim to require the publication of such other information as is needed for the purposes of providing transparency. Whether or not published, BT will need to demonstrate to us that its charges are reasonably derived from the costs of provision and therefore meet the Basis of charges obligation. For this purpose, we are likely to require that it provides Ofcom with its methodology for how charges have been derived and a compliance statement on an annual basis. We note BT’s comments as to what other information could be reported which is not commercially sensitive, and we will consider this further before issuing a cost accounting Direction setting out the form of reporting for the RFS.

Consistency with the EC recommendations and the BEREC Common Position

13.83 We consider that our decision to require LLU is consistent with the BEREC Common Position, in particular BP7a which states “NRAs should impose unbundled access to the copper loops at the MDF”. In terms of BP9-10 concerning the provision of products CPs can use to reach the point at which LLU is made available (i.e. the exchange), we note that BT is already required to supply leased line products under the provisions of the BCMR which can be used for such purposes.

13.84 We consider that the requirements to make available the specified ancillary services with associated pricing obligations is consistent with BP16 which states that “NRAs should impose obligations with regard to the provision of co-location and other...” However, we note that such publication may be appropriate at a service level for certain charge controlled services, and so we consider this on a case by case basis.
associated facilities on a cost-oriented basis under clear rules and terms approved by
the regulator to support viability of the access products mentioned above”.

13.85 Based on the existing level of competition in the relevant downstream markets, we
consider that ex post competition law is adequate to deal with the risk of margin
squeeze in relation to LLU and therefore do not consider it necessary to put in place
specific obligations preventing SMP CPs from engaging in margin squeeze as
detailed in BP49.

13.86 We note that the NGA Recommendation does not address LLU as it is a CGA
remedy. We also note that key elements of the Costing and Non-discrimination
Recommendation presuppose the application of LLU e.g. its recommendations on the
appropriate costing methodology for LLU. These are addressed in more detail in
Section 19.
Section 14

Remedies: WLA conclusion

Introduction

14.1 In Sections 12 and 13 we set out a number of specific access remedies we are imposing on BT in the WLA market. We have considered each individually, both in terms of the reasons for requiring each of them, and in terms of their optimal design when assessed against the objectives of promoting competition and investment.

14.2 We now conclude on these specific access remedies in combination, as our conclusions on each remedy are linked logically to the approach taken on each of the others.

14.3 This section covers:

- the role of LLU in promoting competition in CGA services over the market review period;
- the role of VULA, SLU and PIA in promoting competition and investment in NGA over the market review period;
- conclusion on the appropriate set of specific access remedies for the WLA market; and
- consistency of our conclusions with certain aspects of the EC Recommendations and the BEREC Common Position.

The remedy for CGA services

14.4 During the period covered by this market review, the large majority of services provided over BT’s access network will be based on its existing copper network. While a small portion of BT’s NGA investment is in ‘new build’ areas where it has no CGA network, in general BT’s NGA network is an overlay, i.e. it will be run alongside its CGA network rather than replacing it (at least for the foreseeable future). Therefore, while much of the discussion on WLA access remedies covers NGA, it is important that regulation of CGA continues to be effective.

14.5 LLU has been an effective access remedy, so much so that it has enabled a significant degree of deregulation in the downstream WBA market. Were we to remove the existing LLU remedy, this could lead to a need to re-impose some regulation in the WBA markets. Retaining LLU, subject to a charge control, is likely to lead to the greatest benefit for citizens and consumers. It enables CPs to continue to compete with BT and to innovate and differentiate their products to a greater extent in a way that is technically and economically feasible, ensuring that the existing benefits of LLU-based competition are retained without limiting development of competition and investment in downstream markets.
The remedies for NGA services

14.6 Our primary objective when considering specific access remedies on BT in relation to NGA is to promote effective competition to address the concerns that we identified in our market analysis. In promoting competition, we are, of course, also mindful of our duties in relation to investment, as our conclusions on NGA remedies have the potential to affect the level of investment in NGA networks (and perceived investment risks more generally). We now discuss how we have considered these objectives in relation to NGA remedies.

14.7 We consider that it is necessary to have specific access remedies to support competition and investment in NGA, alongside continuation of LLU. This enables BT’s competitors to compete effectively by providing a full range of CGA and NGA services in downstream markets. Equally, retaining our approach of providing pricing flexibility for BT over the price it charges for VULA services supports BT’s original business case to invest in NGA and the incentive to continue to deploy and upgrade its NGA network, e.g. investing in technologies such as vectoring, FTTP (including through FTTP on Demand) and potentially FTTDP to increase the speed and capacity of the network.

14.8 We consider that VULA is likely to be the primary basis of competition in the supply of NGA-based services to consumers over the market review period. VULA is technology neutral and provides a technically and economically viable way of unbundling BT’s NGA networks. As major CPs like Sky and TalkTalk already have LLU networks, which include backhaul to the exchanges where VULA can be accessed, the incremental level of investment for VULA is low. This is the case even for CPs without such existing networks as they can buy regulated products to reach the exchange (or buy wholesale NGA broadband services). As such CPs can provide NGA services at lower risk as they do not have to invest in their own infrastructure, this reduces both sunk costs and the importance of economies of scale for these CPs. By using VULA as the basis to compete in the first instance, other CPs are able to build their customer base in the supply of NGA services, which could provide a stronger basis for investing in deploying their own networks in the future, e.g. using physical access remedies or self-building.

14.9 VULA compares favourably with other remedies on the basis of static costs because it does not involve significant duplicative investment by other CPs. However, this is not the only basis on which we consider our approach to remedies. We recognise that other CPs (potentially having built up a base of NGA customers using VULA) may want to invest at a deeper level. This could allow them to access a greater proportion of the value chain and gain a higher degree of control which could offer greater dynamic benefits such as more scope to innovate. Providing access to BT’s infrastructure via physical remedies such as SLU and PIA could facilitate this, thereby supporting stronger competition and more investment.

14.10 A further reason for allowing alternative (i.e. in addition to LLU and VULA) forms of access remedies is that there are a number of uncertainties that are likely to affect the optimal choice. We note that three-quarters of broadband customers are yet to upgrade to superfast, and as such there are still a significant number of future NGA customers to be won. Further, the rate at which NGA is taken up, i.e. the future demand profile, and the premium that customers are willing to pay for NGA remains subject to a degree of uncertainty. There is also the potential for changes in technology (as occurred with LLU). All of these factors could change the relative economics of the different ways CPs can compete.
14.11 We therefore consider that a ‘mixed economy’ of access remedies should be available in this market given the current status of its evolution. In turn, having this range of SMP remedies should promote better outcomes for consumers in terms of the price and availability of retail services. We consider that our overall approach is proportionate because we are setting fewer specific and detailed obligations on BT in relation to the physical remedies, in advance of clear expressions of demand and given the uncertainty about the current feasibility of deploying NGA using such physical remedies.

Conclusion

14.12 The suite of specific access remedies put in place in this market review represents a continuation of the regime for CGA and NGA established in the 2010 WLA market review.

14.13 We note that, following close to a decade’s worth of investment in LLU, the 2010-14 market review period saw substantial investment by BT in its predominantly FTTC-based NGA network, under a regulatory approach that sought to incentivise such investment while promoting competition. The majority of this investment (to 66% of UK premises) has been undertaken commercially by BT. Without this investment, other CPs that had not invested in their own network would be unable to offer any NGA services to their customers.

14.14 As we anticipated in the 2010 WLA Statement, where BT has deployed NGA, the main remedy that CPs have used to offer NGA services to their customers has been VULA. Although BT Consumer is currently by far the largest user of VULA, other CPs, such as Sky, TalkTalk and EE are all offering NGA services based on VULA to their customers.

14.15 Despite the limited use of PIA and SLU to date, we consider that it is appropriate to continue with the same set of specific access remedies and pricing approach for those remedies. Therefore, for the 2014-17 market review period we are continuing to require BT to provide LLU, VULA, SLU and PIA.

Consistency with the EC recommendations and the BEREC Common Position

14.16 In concluding on the mix of access remedies to be imposed, we have taken utmost account of the NGA Recommendation, the Costing and Non-discrimination Recommendation and the BEREC Common Position. We consider our conclusions are generally consistent with these documents (where we have departed on specific remedies for reasons relating to the circumstances of the UK market, we have explained this). In terms of consistency, we note in particular:

- NGA Recommendation 3 which states “The regulatory framework provides NRAs with a range of remedies, allowing them to design appropriate measures to tackle market failures and achieve intended regulatory objectives in each Member State” and BEREC Common Position BP1, which states “NRAs should impose the appropriate and proportionate combination of access products that properly reflect

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1134 We deal with the consistency of our specific WLA remedy decisions with the EC recommendations and the BEREC Common Position in the context of our decisions in Sections 12 and 13 above.
their national circumstances..." We have detailed above the roles we expect the specific access remedies will play in the UK market over the review period in light of current and expected future investments.

- NGA Recommendation Recital 3 which states “The appropriate array of remedies imposed by an NRA should reflect a proportionate application of the ladder of investment principle” and BEREC Common Position BP2, which states “NRAs imposition of remedies should be based on the ladder of investment principle...” We have detailed in paragraphs 14.6 to 14.11 above how the suite of specific access remedies would offer multiple points in the value chain at which CPs can enter and then potentially move up that value chain.

- Recommendation 3 of the Recommendation on costing and non-discrimination which states that this Recommendation “sets out a common approach for promoting … consistent and effective implementation [of NRA’s requirements to impose SMP regulation] with regard to legacy and NGA networks in so far as they allow for the provision of broadband services”. We have addressed how our CGA (i.e. legacy) and NGA remedies are consistent with the approach and specific provisions set out in the Recommendation on costing and non-discrimination in pursuit of the above aim, in Sections 12 and 13 respectively. This includes consistency with Recommendation 49 which recommends, in relation to NGA and CGA regulation, not setting cost-based wholesale access prices on virtual wholesale inputs (i.e. VULA) if EOI and technical and economic replicability are in place, and under the condition that a cost-oriented, price-controlled legacy access network product (i.e. LLU) exercises a demonstrable retail price constraint.

- BEREC Common Position BP3, which states “NRAs should encourage infrastructure competition at the deepest level where it is reasonable, to reduce barriers to entry”. In paragraph 14.8 we set out that we expect VULA is likely to be the primary basis of competition in NGA-based services. This is based on our expectations of the level at which CPs are likely to invest and, in light of this, we have set out the requirements discussed in Section 12 to ensure the VULA product is fit for purpose. However, to retain the option for CPs to invest at a deeper level, we are continuing to maintain PIA and SLU with appropriate price regulation.

- BEREC Common Position BP4, which states “...[D]ifferent treatment of copper and fibre access should be justified and non-discriminatory, and should be motivated by differences in identified competition problems between copper and fibre”. In creating VULA we aimed to provide an access remedy as close as possible to LLU, as it was not possible to exactly recreate LLU based on the NGA network BT was deploying. Further, we consider it remains appropriate to maintain a different pricing obligation on VULA compared to LLU in light of the different competitive constraints. This constraint and the other reasons for our approach on the pricing of VULA are set out in Section 12.
Section 15

Remedies: WFAEL

Introduction

15.1 In Section 3 we set out our conclusion that BT and KCOM have SMP in the market for WFAEL. In addition to the general remedies set out in Section 10, in this section we set out our decisions to impose specific access remedies on BT for the WFAEL market in the UK excluding the Hull Area. We set out our full cost analysis and detailed charge controls in Section 16 and Volume 2 of this Statement. As discussed in Section 10, we consider that imposing specific network access remedies on KCOM in the same form as BT, in the absence of clear evidence of demand in the Hull Area for the particular access products currently supplied by BT, to be disproportionate and inappropriate at this time. We consider that opportunities for competition are best met by continuing to rely instead on the general network access obligations we set out in Section 10. Our pricing decision for TRCs and SFIs that are provided as ancillary services in the WFAEL market is set out in Section 18.

15.2 In this section, we set out our decisions to impose:

- a specific access remedy on BT in the form of a requirement to offer WLR, including such ancillary services as are reasonably necessary to enable and support the provision of WLR; and

- a charge control on BT for certain WLR services.

15.3 We also describe our policy as to what we expect to include in the cost accounting direction for the WFAEL market made under our regulatory financial reporting condition.

Requirement for BT to provide Wholesale Line Rental

15.4 WLR is a wholesale service sold by BT both to its own downstream businesses and to competing CPs. It is either sold onward to different retail providers, or used by the wholesale buyer to provide retail narrowband access services either as a line rental service or as part of a bundle of services. It provides retail customers (both residential and business) with access to narrowband telephony services such as telephone calls and facsimile.

Impact of WLR (in the UK excluding the Hull Area)

15.5 WLR remains an important service for supporting effective competition in fixed narrowband services at the retail level. As we found in the 2013 Narrowband Statement\(^{1135}\), the retail market for both narrowband analogue access and calls is competitive and a key driver in facilitating that development has been the provision of WLR.

\(^{1135}\) Ofcom, Review of the fixed narrowband services markets, September 2013

15.6 Figure 14.1 below illustrates the external demand for WLR (i.e. WLR demand from BT’s competitors) from 2004 to (Q2) 2012.

**Figure 14.1: WLR external demand**

![Graph showing WLR external demand from 2004 to Q2 2012](image)

*Source: Ofcom and operator data*

15.7 We expect there to be continued material demand for WLR during the forward look period of our review and that WLR will remain important for competition. In Section 3 we explain that there are some groups of customers for whom there are currently limited alternatives to BT’s WLR, and the existence of these groups of customers is likely to limit any further decline in WLR during this review period. As discussed in Section 3, these customers include: customers in off-net areas, voice-only customers, customers buying voice and broadband separately, and some business users. In addition to the existence of customers for whom there are likely to remain limited alternatives to WLR for the period covered by this market review, we also note that there are likely to be other factors limiting WLR decline.

**Policy proposals as set out in the July 2013 FAMR Consultation**

15.8 In the July 2013 FAMR Consultation, we proposed retaining the requirement on BT to provide WLR. We considered that there is material demand for WLR and that it will continue to have an important role to play in supporting competition in fixed narrowband services at the retail level for the period covered by this review.

15.9 In the July 2013 FAMR Consultation, we asked:

> 14.1 Do you agree with our proposal to continue to require BT to provide WLR? Please provide reasons in support of your views.

**Stakeholder responses to the July 2013 FAMR Consultation**

15.10 BT agreed with Ofcom’s proposal to retain the requirement on BT to provide WLR (and any reasonably necessary ancillary services) although noted that market conditions specific to analogue exchange lines had changed significantly since the 2010 WFAEL Review, with MPF having an important competitive effect and exerting
a strong pricing constraint over WLR. As a result, BT said that future reviews should consider whether WLR regulation remained proportionate.\textsuperscript{1136}

15.11 EE\textsuperscript{1137}, Verizon\textsuperscript{1138}, Vodafone\textsuperscript{1139},\textsuperscript{1140} and Virgin\textsuperscript{1141} agreed with our proposal to continue to require BT to provide WLR.

**Analysis including Ofcom response to stakeholder responses**

15.12 As our assessment of the WFAEL market shows, the level of investment required by a third party to replicate BT’s CGA network on a sufficiently large scale to compete at this level is a significant barrier to entry in this market. In the absence of requiring access to BT’s infrastructure for the purposes of providing retail CGA services, we consider that BT would have the incentive and ability to refuse access at the wholesale level and thereby favour its own retail business with the effect of hindering sustainable competition in the corresponding downstream markets, ultimately against end-users’ interests. Therefore, we consider that an analogue WLR remedy requiring BT to make available a product that allows other CPs to compete with BT’s downstream businesses is necessary to address directly BT’s SMP in the WFAEL market.

15.13 Furthermore, this remedy also has the ability to enhance remedies in downstream calls markets (for example, Carrier Pre-Selection (‘CPS’), which applies in the call origination market) by exposing a greater part of the value chain to competition.\textsuperscript{1142}

15.14 As noted in paragraph 15.7, given that there is still material demand for WLR and that we consider it will continue to have an important role to play in supporting competition over the forward look of our market review, it is important that BT continues to supply WLR services (including ancillary services which are reasonably necessary for the provision of WLR) on a wholesale basis to other CP’s. We note that stakeholders responding on this agreed with maintaining WLR as a remedy.

**Final policy conclusion**

15.15 For the reasons set out above, we have decided to require BT to offer WLR at a wholesale level (together with such ancillary services as may be reasonably necessary for the use of those services). The condition is set out in full in Annex 29.

\textsuperscript{1136} Paragraph 387, BT response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.

\textsuperscript{1137} P.18, EE response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.


\textsuperscript{1139} P.24, Vodafone response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Vodafone.pdf.

\textsuperscript{1140} P.25, Virgin response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Virgin_Media.pdf.

\textsuperscript{1142} In the 2013 Narrowband Statement, we explained that retail competition in the UK excluding the Hull Area is largely focused on bundles of access and calls, and this is underpinned by the WLR obligation in the exchange lines market and CPS in the wholesale call origination market. As a result, we decided to require BT to provide CPS where BT also provides WLR to an external CP to support this competition, and allow retail providers to compete on the same basis.
15.16 The obligation to provide WLR is on the basis of fair and reasonable terms and conditions (and in some cases, charges) and in line with the requirement to provide network access on reasonable request as set out in Annex 29.

Legal tests

15.17 We consider that the obligation to provide WLR services, together with such ancillary services as may be reasonably necessary for the use of those services, is appropriate and satisfies the legal tests set out in the CA03.

15.18 Section 87(3) of the CA03 authorises Ofcom to set SMP services conditions requiring the dominant provider to provide such network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within the periods and at the times required by or under the conditions.

15.19 In setting this condition, we have taken into account the factors set out in section 87(4) of the CA03. In particular, when considering the economic viability of CPs building alternative access networks that would make wholesale access to WLR unnecessary, we are of the view that this is unlikely given the costs involved and the transition from CGA to NGA networks. Further, we consider that it is entirely feasible for BT to be required to provide WLR services in light of their very widespread existing provision. We consider the condition should also continue to help ensure that the need to secure effective competition in the long term is met.

15.20 We have also considered our duties under section 3 and the Community requirements set out in section 4 of the CA03. In particular, we consider that the condition furthers the interests of citizens in relation to communications matters and furthers the interests of consumers in relevant markets in line with section 3 of the CA03 by encouraging competition in fixed narrowband services at the retail level.

15.21 We also consider that the condition meets the requirements set out in section 4 of the CA03. As noted above, the condition promotes competition and secures efficiency and sustainable competition and the maximum benefit for customers by enabling providers to compete in downstream markets.

15.22 We consider the condition meets the criteria set out in section 47(2) of the CA03. The condition is:

- objectively justifiable, in that it seeks to ensure that competition develops in downstream access markets for the benefit of consumers. As noted in paragraph 15.5 above, the growth of competition based on WLR has delivered benefits to consumers in terms of competition. Removing the obligation to provide WLR may result in BT withdrawing the product or otherwise changing it to the detriment of the existing level of downstream competition that has developed;

- not unduly discriminatory, in that the condition aims to address BT’s market power only in the market in which we find that BT has SMP (namely, the UK excluding the Hull Area). As noted earlier, while we find KCOM to have SMP in the WFAEL market in the Hull Area, we consider that imposing specific network access remedies on KCOM in the absence of clear evidence of demand to be disproportionate and inappropriate at this time (rather we consider that the
obligation imposed on KCOM to provide network access on reasonable request is sufficient to ensure that KCOM provides WLR services should a reasonable request be made in the Hull Area);

- proportionate, in that the requirement is necessary, but no greater than necessary, to promote efficiency and sustainable competition for the maximum benefit of customers of communications providers, but, as discussed in paragraph 15.19 above, is not unduly burdensome on BT (taking account of the fact that BT already supplies this service); and

- transparent, in that it is clear in its intention to ensure that BT provides WLR products (and ancillary services which are reasonably necessary for the provision of WLR).

WLR pricing approach

WLR charge control

Policy proposals as set out in the July 2013 FAMR Consultation

15.23 In the July 2013 FAMR Consultation, we proposed to continue to impose a charge control on BT for WLR (and certain ancillary services) as we considered that, in the absence of any such control, BT would have the ability and incentive to charge at an excessive level. Such excessive charging could risk excessive prices for consumers and inhibit downstream competition.

15.24 As we considered that an appropriately designed charge control would be sufficient to address our competition concern (namely, excessive pricing), we provisionally concluded in the July 2013 FAMR Consultation that an additional Basis of charges obligation would be unnecessary and disproportionate.

15.25 In the July 2013 FAMR Consultation, we asked:

14.2 Do you agree with our proposal to continue to apply a charge control on WLR? (Noting that comments on the specifics of that control should be made in response to the forthcoming 2013 LLU WLR Charge Control Consultation.)

Stakeholder responses to the July 2013 FAMR Consultation

WLR charge control

15.26 EE, Verizon, Vodafone and Virgin all agreed with Ofcom’s proposal to impose a charge control on BT for WLR (as well as certain ancillary services).

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**Basis of charges**

15.27 BT agreed that Ofcom should not impose a Basis of charges obligation alongside a charge control. It said this would allow simpler and clearer regulation with benefits for all and would be consistent with Ofcom’s approach in other reviews (e.g. the 2013 BCMR Statement). BT also expressed concern that, because Ofcom had proposed to adjust the asset base for WLR as part of the charge control, a cost orientation obligation could cause compliance issues. By way of example, BT noted that it could be in a situation where it complied with the charge control but not with the Basis of charges obligation (as charges may be above DSAC as a consequence of prices being set upon a higher asset base).1148

15.28 EE said it strongly disagreed with Ofcom’s proposal to not impose a Basis of charges obligation on BT and continued to believe that cost orientation was both necessary and proportionate in addition to a charge control.1149

15.29 Virgin was concerned that removal of a (near) market-wide cost orientation remedy and reliance upon the fair and reasonable access condition substantially weakened the regulatory protection afforded in relation to WLR services despite there being no significant change in this market which may have justified such a change of approach.1150

**Analysis including Ofcom response to stakeholder responses**

15.30 We first consider whether it is appropriate to continue to impose a charge control that would set prices for the period of the market review. Having set out these considerations, we then discuss whether we should also impose a Basis of charges (or ‘cost orientation’) obligation alongside a charge control.

**WLR charge control**

15.31 The aim of a charge control is to prevent excessive pricing (i.e. pricing above the competitive level). We believe that a well designed charge control which sets charges so that they are constrained to a reasonable level of cost would achieve this aim. Moreover, we also consider that a charge control would provide certainty and transparency with regard to charges over the course of the charge control period, particularly as a charge control would allow charges to be set in advance.

15.32 The identification of the risk of excessive pricing is a necessary precondition under section 88 of the CA03 to enable us to set an SMP condition imposing a charge control. That risk arises here because, as our analysis of the WFAEL market in the UK excluding the Hull Area shows, in the absence of any such control, BT would

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have the ability and incentive to price at an excessive level, leading to excessive prices and inhibiting downstream competition. A charge control addresses this risk and protects consumers. We note that, overall, no stakeholder specifically argued for the removal of the WLR charge control.

15.33 We have therefore decided that a charge control on BT for WLR (as well as certain ancillary services) is appropriate for the period covered by this market review.

15.34 We set out our full cost analysis, specific pricing decisions and explanation of how the charge controls are sufficient to prevent excessive pricing for individual charges in Section 16 and Volume 2. We consider that our approach to the form, level and structure of the WLR controls addresses our concerns in the WFAEL market of a relevant risk of adverse effects arising from a price distortion if BT fixes and maintains its prices at an excessively high level for WLR services. These controls are aimed at ensuring that charges are constrained to an appropriate level, while at the same time ensuring that BT is able to recover its efficient costs.1151 As a result, we consider that the charge control is designed in a proportionate manner such that it does not produce any adverse effects which are disproportionate to our competition concern. Therefore, on this basis, we also consider that a charge control is the most proportionate remedy to achieve the aim of addressing the risk of BT realising its ability and incentive to engage in excessive pricing in this market.

**Whether to impose an additional Basis of charges obligation**

15.35 Having set out our decision on the need for a WLR charge control, we now turn to the question of whether we should also impose a Basis of charges obligation on BT.1152

15.36 We note EE and Virgin’s concerns (as summarised in paragraphs 15.28 and 15.29). However, for the same reasons as with LLU (see Section 13, paragraphs 13.42 to 13.46), we consider that the imposition on BT of a Basis of charges obligation (in addition to a charge control) would be unnecessary and disproportionate.

15.37 We have explained above that we consider that a charge control is the most effective and proportionate remedy to address our competition concern of excessive pricing by BT. We consider that an appropriately designed charge control, constraining charges but allowing for the recovery of efficiently incurred costs, is both effective and proportionate to address our competition concerns.

15.38 We also set out in Volume 2 how the design of our charge control results in a Basis of charges obligation being unnecessary and disproportionate.

**Conclusion**

15.39 For the reasons set out above, we have decided to continue to impose a charge control on BT for WLR services (as well as certain ancillary services) as we consider that, in the absence of any such control, BT would have the ability and incentive to price at an excessive level, leading to excessive prices for consumers and inhibiting downstream competition. We do not, however, impose an additional Basis of charges obligation.

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1151 We specifically address stakeholders concerns about the specific form, level and structure of controls in Volume 2.

obligation for these services as we are of the view that a well designed charge control which sets charges so that they are constrained to a reasonable level would prevent BT from setting excessive prices and would therefore achieve our goal in the most proportionate way.

15.40 We set out our full cost analysis and detailed charge controls in Section 16 and Volume 2 of this Statement.

Legal tests

15.41 We assess the application of the relevant legal tests to the WLR charge control condition in Section 19 of this Statement.

Cost accounting for WFAEL

Policy proposals as set out in the July 2013 FAMR Consultation

15.42 In the July 2013 FAMR Consultation, we set out our belief that it is appropriate to have cost reporting in the RFS for the WFAEL market on a FAC basis (in line with the FAC information that is currently produced). Further, as we proposed not to impose a separate Basis of charges obligation on services that are separately charge controlled, we proposed not to require the publication of DLRIC and DSAC as CPs no longer need these to monitor compliance regarding Basis of charges. However, we proposed that BT should be required to maintain DLRIC and DSAC data.

Stakeholder responses to the July 2013 FAMR Consultation

15.43 BT and Virgin made the same comments in respect of cost accounting for the WFAEL market as they made for WLA (see Section 13 for these comments).

15.44 Verizon said that Ofcom should not reduce the cost information required to be published by BT and that the publication of DLRIC and DSAC for WLR services remained useful and informative.1153

15.45 EE disagreed with Ofcom’s proposals.1154 Supplementary to its response to the July 2013 FAMR Consultation, EE also asked Ofcom to clarify whether it would continue to require BT to publish information on ‘Wholesale Analogue Exchange Line Services calculation of FAC based on component costs and usage factors’ as part of the obligation.1155


Analysis including Ofcom response to stakeholder responses

15.46 We have published the 2014 Regulatory Financial Reporting Statement\textsuperscript{1156}, setting out our revised cost accounting condition. We will subsequently be issuing cost accounting Directions pursuant to the Regulatory Financial Reporting Statement setting out the form of reporting for the RFS. We describe here our policy as to what we expect to include in the cost accounting Direction. There are two broad elements to this: cost accounting at the charge control level, and at the service level.\textsuperscript{1157}

15.47 In relation to the former, we believe it is appropriate for BT to be required to maintain FAC data for WFAEL at the charge control level, and for this cost data to be reported in the RFS. By this we mean the maintenance and publication of total FAC for each charge control, so if the associated charge control is a basket design then the reported FAC should also be for the total basket, and if it is a single product charge control the reported FAC should also be for the individual product.\textsuperscript{1158} This is because, as discussed in relation to these requirements in the WLA market (including BT’s consultation response – see Section 13), we consider that trends in profitability at this level are informative in the context of considering the effectiveness of remedies as a whole, and that FAC information at this level also provides transparency for stakeholders (including how BT has allocated costs across different baskets or single controls). We see this as facilitating stakeholder confidence that such costs have been allocated consistently. It also mitigates against the risk of double recovery of costs or that costs might be unreasonably loaded onto particular charge controls.

15.48 At the service level in the WFAEL market, we consider that it is appropriate for BT to be required to maintain FAC, DLRIC and DSAC for WLR services despite BT’s query about the need for this. This is because (as discussed in relation to WLA in Section 13) we consider that this data is necessary in the context of considering the effectiveness of remedies going forward, provides transparency regarding how BT has allocated costs across regulated services, and mitigates against the risk of double recovery of costs or that costs might be unreasonably loaded onto particular services. However, we do not consider it necessary for this data to be published (despite Verizon’s argument to the contrary), as without a separate Basis of charges obligation on services that are separately charge controlled (e.g. in this case, WLR), CPs no longer need this data to monitor compliance with this obligation. This is consistent with our approach and reasoning in other recent decisions where we have removed Basis of charges obligations.\textsuperscript{1159}

15.49 We set out in Section 13 our view of Virgin’s argument that LRIC data should be published for charges which are ‘fair and reasonable’ and that LRIC data is

\textsuperscript{1157} Note, we set out our cost accounting policy for TRCs in Section 18.
\textsuperscript{1158} With respect to EE’s query above we can confirm that this publication requirement will continue to require BT to publish information on Wholesale Analogue Exchange Line Services calculation of FAC based on component costs and usage factors.
\textsuperscript{1159} Ofcom, \textit{Business connectivity market review - final statement}, 28 March 2013, \url{http://stakeholders.ofcom.org.uk/consultations/business-connectivity-mr/final-statement/} and Ofcom, \textit{Review of the fixed narrowband services markets}, September 2013, \url{http://stakeholders.ofcom.org.uk/consultations/nmr-13/statement/}. However, we note that such publication may be appropriate at a service level for certain charge controlled services, and so we consider this on a case by case basis.
necessary to ensure compliance with the LLU and WLR charge controls. We consider that the arguments presented in Section 13 in relation to the WLA market are also relevant for the WFAEL market. As such, we consider that a requirement to publish information (for example on a LRIC basis) for such services is unnecessary and inappropriate in light of our remedies in this market.
Section 16

Remedies: Summary of approach to setting LLU and WLR Charge Controls

Introduction

16.1 In Sections 13 and 15 we set out that we will maintain charge controls on LLU and WLR (along with relevant ancillary services) in order to address BT's ability and incentive to fix or maintain prices at an excessively high level for these services. We summarise in this section how the charge controls will be set, including our approach and our decisions on the structure and level of the charges. A detailed explanation of our approach, including the principles we have used to set the charges and our modelling approach (including the inputs and adjustments we have made), is set out in Volume 2 of this Statement ('Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 – Volume 2: LLU and WLR Charge Controls').

Duration of the charge controls

16.2 The previous charge controls on LLU and WLR services expired on 31 March 2014. The new charge controls will enter into force on 1 July 2014 and cover the period to 31 March 2017.\textsuperscript{1160}

Structure of the charge controls

LLU

16.3 We have decided to:

- set individual CPI-X charge controls for MPF rental, SMPF rental, and certain key migration services;
- set separate CPI-X basket controls on five defined sets of LLU ancillary services. These group together services which are homogeneous in terms of their characteristics, competitive conditions and costs;
- require BT to ensure that certain charges for analogous services remain aligned\textsuperscript{1161}; and
- align all migration charges involving jumpering to a volume-weighted average of their incremental costs.

\textsuperscript{1160} See Section 3 of Volume 2.
\textsuperscript{1161} In particular, alignment obligations will apply to BT in relation to LLU and WLR enhanced care services and certain comparable MPF and SMPF services (including SFIs and certain other ancillary services). See Section 4: Charge Control Design (Volume 2) for more details and Section 18 (Volume 1).
16.4 Based on the policy conclusions and financial modelling explained in this Statement, the new charge controls for LLU services (excluding the alignment of charges obligations, which are explained in Section 19 of Volume 1) are summarised in Table 16.1 below.

Table 16.1: LLU charge controls 2014-17

<table>
<thead>
<tr>
<th>Service /Basket</th>
<th>2011/12 [\text{$m}]</th>
<th>Charges at 31 March 2014 (\£)</th>
<th>Nominal charges for 2014/15 [\text{$m}]</th>
<th>Charge control for 2015/16 to 2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPF Rental</td>
<td>451</td>
<td>83.92</td>
<td>86.10</td>
<td>CPI+0.3%</td>
</tr>
<tr>
<td>SMPF Rental</td>
<td>43</td>
<td>9.89</td>
<td>5.54</td>
<td>CPI-33.4%</td>
</tr>
<tr>
<td>MPF Single Migration</td>
<td>31</td>
<td>30.65</td>
<td>30.77</td>
<td>CPI-1.7%</td>
</tr>
<tr>
<td>MPF Bulk Migration</td>
<td>15</td>
<td>28.42</td>
<td>25.92</td>
<td>CPI-10.9%</td>
</tr>
<tr>
<td>SMPF Single Migration</td>
<td>8</td>
<td>30.65</td>
<td>30.77</td>
<td>CPI-1.7%</td>
</tr>
<tr>
<td>SMPF Bulk Migration</td>
<td>2</td>
<td>28.42</td>
<td>25.92</td>
<td>CPI-10.9%</td>
</tr>
<tr>
<td>SMPF New Provide</td>
<td>25</td>
<td>30.65</td>
<td>30.77</td>
<td>CPI-1.7%</td>
</tr>
<tr>
<td>MPF New Provides basket</td>
<td>[$55m-$65m]</td>
<td>Various</td>
<td>Various</td>
<td>CPI-2.9%</td>
</tr>
<tr>
<td>Hard Ceases basket</td>
<td>[$15m-$25m]</td>
<td>Various</td>
<td>Various</td>
<td>CPI+0.4%</td>
</tr>
<tr>
<td>Other LLU ancillaries</td>
<td>[$50m-$110m]</td>
<td>Various</td>
<td>Various</td>
<td>CPI-5%</td>
</tr>
<tr>
<td>Co-Mingling New</td>
<td>[$30m-$55m]</td>
<td>Various</td>
<td>Various</td>
<td>CPI-3.4%</td>
</tr>
<tr>
<td>Provides and Rentals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>basket</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tie Cables basket</td>
<td>28</td>
<td>Various</td>
<td>Various</td>
<td>CPI-11.8%</td>
</tr>
</tbody>
</table>


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1162 Source: External revenues as per BT’s 2011/12 RFS, page 55, for all services apart from ‘MPF New Provides basket’, ‘Hard Ceases basket’, ‘Other LLU ancillaries basket’, and ‘Co-Mingling New Provides and Rentals basket’ revenues which are sourced from BT’s 2012/13 LLU WLR Compliance Statement.

1163 Charges apply from 1 July 2014 to 31 March 2015. This is also true for all subsequent tables referring to charges set for 2014/15.

1164 The full list of individual services in this basket and their charge controls is included in Part 3 of the Annex to SMP condition 7A, as set out in Annex 29 of this Statement.

1165 The full list of individual services in this basket and their charge controls is included in Part 2 of the Annex to SMP condition 7A, as set out in Annex 29 of this Statement.

1166 The full list of individual services this basket and their charge controls is included in Part 4 of the Annex to SMP condition 7A, as set out in Annex 29 of this Statement.

1167 The full list of individual services in each one of these baskets and their charges controls are included in Part 5 of the Annex to SMP condition 7A, as set out in Annex 29 of this Statement.

1168 The full list of individual services this basket and their charge controls is included in Part 1 of the Annex to SMP condition 7A, as set out in Annex 29 of this Statement.
WLR\textsuperscript{1169}

16.5 We have decided to:

- set individual CPI-X charge controls for the Basic Analogue WLR rental service ('WLR Rental')\textsuperscript{1170}, and WLR Transfer;
- introduce a charge control on WLR Conversion and to align the charge for WLR Conversion with the charge for LLU single migration services involving jumpering\textsuperscript{1171};
- introduce a discounted charge for WLR Conversion where it is provided in combination with SMPF New Provide to simultaneously transfer a customer from MPF to WLR and SMPF;
- set CPI-X basket controls on a basket of two WLR Connections services\textsuperscript{1172};
- introduce a discounted charge for WLR Connections when provided in combination with SMPF New Provide to simultaneously connect a customer to WLR and SMPF; and
- introduce an individual charge control on Caller Display.\textsuperscript{1173}

16.6 Based on the policy conclusions and financial modelling explained in this Statement, the new charge controls for WLR services are set out in Table 16.2 below.

\textsuperscript{1169} For the avoidance of doubt, WLR here refers to WLR services for analogue services only (i.e. within the WFAEL market), and not to ISDN services.

\textsuperscript{1170} We do not set a charge control on WLR Premium line rental services, i.e., Premium Line, Main Aux or Aux Line Rental terminating on Linebox or NTTP. (For the names of the premium services, see Openreach’s price list at: http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=vZC%2BGHiu80GtUKWLu%2BtzAfgMZEuYNVwUnHgezzqOd1UNeIS4WkBRh6sz%2FRUAT8maxtgrEro1A7%0Aw5V8nzAZpQ%3D%3D).

\textsuperscript{1171} WLR Conversion was previously subject to a Basis of Charges obligation, not a specific charge control.

\textsuperscript{1172} WLR Standard Connection and WLR Start of Stopped MPF Line.

\textsuperscript{1173} This charge control requires the charge for Caller Display to be set and remain (in nominal terms) equal to our estimate of the LRIC for this service from the start of the next charge control. We have decided that the common costs which are currently allocated to Caller Display will be re-allocated to the charge controlled WLR and MPF rentals in an immediate one-off adjustment. See Section 4 of Volume 2 for more details.
Table 16.2: WLR charge controls 2014-17

<table>
<thead>
<tr>
<th>Service/ Basket</th>
<th>2011/12 revenues (£m)</th>
<th>Charges at 31 March 2014</th>
<th>Nominal charges for 2014/15 (£)</th>
<th>Charge control for 2015/16 to 2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLR Rental</td>
<td>2,042</td>
<td>93.32</td>
<td>91.04</td>
<td>CPI-3.0%</td>
</tr>
<tr>
<td>WLR Transfer</td>
<td>13</td>
<td>3.39</td>
<td>4.63</td>
<td>CPI+34.4%</td>
</tr>
<tr>
<td>WLR Connections basket</td>
<td>27</td>
<td>Various</td>
<td>Various</td>
<td>CPI-8.4%</td>
</tr>
<tr>
<td>WLR+ SMPF Simultaneous Connections</td>
<td>N/A</td>
<td>Various</td>
<td>Various</td>
<td>Various</td>
</tr>
<tr>
<td>WLR+ SMPF Simultaneous Migration</td>
<td>N/A</td>
<td>65.51</td>
<td>30.77</td>
<td>Same charge as single migrations</td>
</tr>
<tr>
<td>WLR Conversion</td>
<td>N/A</td>
<td>34.86</td>
<td>30.77</td>
<td>CPI-1.7%</td>
</tr>
<tr>
<td>Caller Display</td>
<td>[c.25]</td>
<td>6.00</td>
<td>0.45</td>
<td>£0.45</td>
</tr>
</tbody>
</table>

Source: Ofcom (except where otherwise indicated). Current charges available on Openreach price list http://www.openreach.co.uk/orpg/home/products/pricing/loadPricing.do.

Approach to setting the charge controls

16.7 Given the policy conclusions and financial modelling explained in this Statement, the controls set out in Tables 1.1 and 1.2 will reflect the principles, modelling approach, inputs and adjustments set out below (paragraphs 16.8 to 16.16).

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1174 Internal and External revenues as per BT's 2011/12 RFS, page 36; and BT response to question 1 of the s.135 notice of 4 October 2013 sent for the LLU WLR Charge Control (revenue for Caller Display).

1175 This is a basket of two connection services in BT's price list, see here: http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=ccWy9ZJoVtf1gb2YRVL3pYSkcG%2Bc%2B30URCuKygKmgSNUNeIS4WkJBRh6z%2FRUAUt8maxtrEro1A7%0A5V8nzA1zQ%3D%3D. In particular, see the services 'Supply of new Basic line - Per line' which we refer to as 'WLR Standard Connection' and 'Supply of new line - Per line – using previously stopped LLU MPF line' which we refer to as 'WLR Start of Stopped MPF Line'.

1176 WLR+SMPF Simultaneous Connection is the term we use in this document to refer to the discounted charge applied to WLR Connections when this service is provided simultaneously alongside SMPF New Provide (see Section 6 of Volume 2 for more details).

1177 We impose a charge discount on WLR Connections when provided simultaneously with SMPF New Provide of £12.82 in the first year of the charge control. In subsequent years, we apply a CPI+X% annual change to the charge discount value in the previous year, with the Xs being +74.7% in 2015/16 and +31.1% in 2016/17.

1178 WLR+SMPF Simultaneous Migration is the term we use in this document to refer to the discounted charge applied to WLR Conversions when this service is provided simultaneously alongside SMPF New Provide (see Section 6 of Volume 2 for more details).

1179 The charge control on WLR+SMPF Simultaneous Migrations will be aligned with the charge control on single migrations (i.e. MPF Single Migrations, SMPF Single Migrations, SMPF New Provide and WLR Conversions).
Principles

16.8 **Form of control:** We have set charge controls, indexed by inflation and rounded to 0.1%, which are designed to align current charges to forecast efficient costs.\(^{1180}\) See Section 3 of Volume 2 and Annex 11.

16.9 **Cost standard:** Total costs to be recovered from the charge controls will, with the exception of pre-1997 local access ducts, be forecast on the basis of current cost accounting fully allocated costs (‘CCA FAC’). The CCA FAC cost base will be subject to an adjustment in that the regulatory asset valuation (‘RAV’) of the pre-1997 local access duct assets will be based on their historic cost accounting (‘HCA’) value, indexed for inflation (this is referred to as the RAV adjustment). See Section 3 of Volume 2.

16.10 **Technology change:** We have used an anchor pricing approach to set charges, based on our view of the efficient on-going costs of providing services over a copper network, excluding all incremental fibre costs. See Section 3 of Volume 2.

16.11 **Cost reflective charges:** We have set the charge controls for the key rental services so that the charge differential between WLR+SMPF and MPF will be equal to our estimate of the LRIC differential for providing these services by 2016/17. We estimate this difference to be £1.79. We have also set the SMPF rental charge so that it will be equal to the LRIC of providing that service by 2016/17. This means therefore that common costs will be recovered equally from MPF and WLR lines by 2016/17. See Section 3 and Section 6 of Volume 2, and Annex 9.

16.12 **Glide path:** Our general policy is to set charges using glide paths to bring charges into line with projected costs by the end of the control period, rather than imposing one-off changes to charges at the start of the Market Review Period. However, we have decided to make immediate adjustments in a small number of cases where there are particular reasons for doing this, for example where we are removing costs which we do not consider appropriate (see model adjustments below). See Section 6 of Volume 2.

Modelling approach

16.13 **Type of model:** We have set the charges using a top-down cost model based on data within and underpinning BT’s RFS. The model uses Asset Volume Elasticities (‘AVEs’) and Cost Volume Elasticities (‘CVEs’) to forecast the costs of operating a hypothetical on-going copper network to 2016/17. See Section 5 of Volume 2 and Annex 13.

16.14 **Input data:** The Cost Model projects forward from BT’s 2011/12 RFS data, using actual 2012/13 data for service volumes, where available. See Annexes 11-13, 22 and 23.

Model inputs

16.15 We have used the following inputs in our charge control cost modelling:

\(^{1180}\) With the exception of the Caller Display charge control which is held constant in nominal terms for the Market Review Period.
• **input price inflation**: of 2.8% for pay costs, 3.0% for accommodation costs, specific values for individual non-pay operating cost inputs for which data is available\(^{1181}\), and forecast CPI for other non-pay costs. See Annex 13;

• **weighted average cost of capital**: pre-tax nominal WACC for the copper access network of 8.6%. See Annexes 14 and 15;

• **single efficiency** target of 5% per annum (net of the costs of achieving the savings). See Annex 16;

• **minimum service quality standards**: to enable Openreach to recover its efficiently incurred costs associated with delivering to the new minimum service quality standards, we have increased the level of engineering costs for provisioning and fault repair within the model by 3.9%. See Annexes 17 and 18;

• **Service Level costs differential**: we have allocated a higher proportion (21%) of variable fault prevention and repair costs to Service Level 2 products (e.g. MPF and SMPF) compared to Service Level 1 products (e.g. WLR basic). See Annex 19;

• **fault rates**: we consider that, for the purposes of cost modelling, fault rates should be held constant throughout the charge control period at the level experienced in 2011/12. We assume equal fault rates for MPF and WLR+SMPF using ratios of 1:0.83:0.17 for MPF:WLR:SMPF. See Annexes 20 and 21; and

• **forecast volumes**: of total lines will be broadly flat, increasing slightly from 24.4 million in 11/12 to around 24.8 million in 2016/17, with broadband penetration increasing by 16% to 82% by 2016/17 (from 2011/12), with 4.5 million WLR (voice only) lines, 10.6 million WLR+SMPF lines and 9.7 million MPF lines. See Annexes 24 and 25.

### Model adjustments

16.16 We have decided to make the following adjustments to certain RFS costs allocated to LLU and WLR services within the Cost Model (see Annex 13):

• **price adjustments**: pricing adjustments will no longer be made in respect of line length, pair gain or the cost of Test Access Matrices (‘TAMs’). The cost of TAMs will be recovered solely through MPF rental charges and we have decided that it should be reduced from the costs within the RFS to £5.15 per line;

• **directories**: to remove with immediate effect the contribution to the cost of printed directories (i.e. the BT Phone Book) from the costs recovered through WLR Rental charges (in 2011/12 this was £1.43);

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• **evoTAMs**: to remove the £0.86 cost of evoTAMs from the SMPF cost stack and £0.49 from the WLR cost stack, again with immediate effect;

• **DSLAM capital/maintenance**: to remove with immediate effect c.70% of the costs attributed to DSLAM capital/maintenance and allocated to SMPF from the costs recovered through these charge controls. For the c.30% remainder of costs, which we understand relate to broadband fault repairs, we have decided to treat these in the same way as other costs associated with fault repair, and allocate them across the MPF, WLR and SMPF rental charges using the fault rate ratios noted above\(^{1182}\);

• **deafness liability costs**: to remove from the 2011/12 base year costs a provision of [£8 million to £12 million] for deafness liability claims arising from past injuries;

• **pension liability costs**: to not make an adjustment to allow the recovery of pension liability costs (additional annual payments required to address any funding shortfall in BT’s pension scheme)\(^ {1183}\); and

• **overseas overheads**: to remove from the 2011/12 base year [£5 million to £10 million] of overheads costs which we consider should have been allocated to overseas divisions within BT Group.\(^ {1184}\)

**Impact of the new charge controls**

16.17 The overall effect, in real terms, of these new controls is that the MPF Rental charge will rise very slightly over the Market Review Period, the WLR Rental charge will fall slightly and the SMPF rental charge fall significantly. See Figures 16.1 and 16.2 below, which present the nominal and real terms trends in these charges over the period 2006 to 2016/17.

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\(^{1182}\) We have decided upon the fault rate ratios in paragraph 16.17 by means of assessing the costs of the totality of BT’s fault repair activities. The activities associated with these broadband faults are part of this broader set of activities. The costs within this c.30% of DSLAM capital maintenance are therefore allocated using these same ratios as the overall costs. See Annex 13.

\(^{1183}\) We estimated that the impact of making the adjustment proposed by BT would increase revenue from regulated charges by around £10 million per year. At the time of the July 2013 LLU WLR Consultation, we estimated that if this was spread over total copper lines, it would add around £0.40 to the unit cost stacks for MPF Rentals and WLR Rentals in 2016/17.

\(^{1184}\) In the 2012 LLU WLR Charge Control Statement, in A4.151 to A4.156, we noted that BT had stated that it had allocated some overhead and IT costs to overseas divisions. This decision to remove costs is consistent with that stated approach, which we considered reasonable. See Ofcom, *Charge control review for LLU and WLR services – statement*, 7 March 2012, [http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/statement/statementMarch12.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/statement/statementMarch12.pdf).
Figure 16.1: Nominal (£) WLR+SMPF, WLR and MPF rental charges from 2006/07 to 2016/17

Source: BT price list (for actual charges to June 2014, and Ofcom analysis for forecast charge controls

Note that BT announced that from 17 May to 30 June 2014, it will put prices for MPF rental up to £96.37, and WLR+SMPF up to £106.96. The effect of this will be smoothed out over the year 2014/15 by BT's voluntary commitment to charge for these rental services as if the 1 July 2014 charge controls had applied since 1 April 2014.
We consider that these charge controls will benefit consumers by:

- ensuring that charges for wholesale services are not excessive and are set at a level that will enable CPs (other than BT) to compete in the provision of downstream services. Previous charge controls for LLU and WLR services have promoted competition in this way to the clear benefit of consumers in respect of choice, price, quality of service and value for money;

- controlling charges in a way that provides BT with incentives to seek to reduce its costs of providing LLU and WLR services;

- ensuring that BT has the incentives to continue to invest and innovate where it is efficient to do so (by, for example, our adoption of the anchor pricing approach and the fact that, in modelling BT’s forecast costs, we have built in a reasonable rate of return on investment);

- enabling CPs to make efficient choices between the substitute WLR+SMPF and MPF wholesale inputs, based on their LRIC differences. These controls will promote efficient NGA choices on the part of both BT in investment in infrastructure and services and of other CPs on the choice of wholesale inputs and associated investment to support retail fibre provision during the period of technology change; and

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1186 See footnote 1185. The real term charges in Figure 16.2 have been calculated using CPI. The decline in charges in real terms would be every greater if RPI had been used.
• reducing the wholesale charges for connecting to WLR+SMPF and switching between MPF and WLR+SMPF to better reflect their efficient costs, enabling stronger retail competition through reducing the transaction costs of WLR+SMPF providers winning customers from MPF or cable providers.
Section 17

Remedies: ISDN30 and ISDN2

Introduction

17.1 In Sections 4 and 5, we set out our conclusion that BT and KCOM have SMP in the markets for both wholesale ISDN30 and wholesale ISDN2. In addition to the general remedies set out in Section 10 in this section we set out our decisions on specific access remedies on BT for the wholesale ISDN30 and wholesale ISDN2 markets in the UK excluding the Hull Area. As discussed in Section 10, we consider that imposing specific network access remedies on KCOM in the same form as BT, in the absence of clear evidence of demand in the Hull Area for the particular access products currently supplied by BT, to be disproportionate and inappropriate at this time. We consider that opportunities for competition are best met by continuing to rely instead on the general network access obligations we set out in Section 10. Our pricing decision for TRCs and SFIs which are ancillary services in the ISDN30 and ISDN2 markets is set out in Section 18.

17.2 In this section, we set out our decision to impose:

- a specific access remedy on BT in the form of a requirement to offer wholesale ISDN30 services, including ancillary services reasonably necessary to enable and support the provision of wholesale ISDN30;
- a charge control on BT for wholesale ISDN30 services;
- a specific access remedy on BT in the form of a requirement to offer wholesale ISDN2 services, including ancillary services necessary to enable and support the provision of wholesale ISDN2; and
- a charge control on BT for wholesale ISDN2 services.

17.3 In setting the wholesale ISDN30 and ISDN2 charge controls, we are:

- with the exception of ISDN2 transfer, capping average charges for both wholesale ISDN30 and ISDN2 services at their current levels in nominal terms during the market review period, which means charges will fall in real terms (i.e. after taking into account general inflation);
- reducing the charge for ISDN2 transfers from £30 per line to £9 per line for the market review period;
- imposing a charge control basket for ISDN30 rentals, connections and enhanced care services. This means that, while the basket as a whole is capped in nominal terms, individual charges within the basket may increase (provided this is compensated by other charges falling and subject to the separate sub-caps for connections and enhanced care services referred to below);
- imposing separate charge controls for each of ISDN30 transfers and each ISDN30 DDI service;
• imposing separate charge controls in relation to ISDN30 connections and enhanced care services (in addition to the basket charge control referred to above); and

• imposing a charge control basket for ISDN2 rentals and connections charges, which, as with the ISDN30 basket, means that some charges within the basket may increase provided this is compensated by other charges falling;

• imposing a separate charge control for ISDN2 transfers.

17.4 We also describe our policy as to what we expect to include in the cost accounting direction for the wholesale ISDN30 and wholesale ISDN2 markets made under our regulatory financial reporting condition.

Requirement for BT to provide wholesale ISDN30

17.5 Wholesale ISDN30 is a digital telephone line service that provides up to 30 channels over a common digital bearer circuit. It is predominantly a business product, which supports a wide range of services, including basic telephony with additional features to those available on analogue lines.

Policy proposals as set out in the July 2013 FAMR Consultation

17.6 In the July 2013 FAMR Consultation, we proposed to require BT to provide wholesale ISDN30.

17.7 In the July 2013 FAMR Consultation, we asked:

15.1 Do you agree with our proposal to continue to require BT to provide wholesale ISDN30? Please provide reasons in support of your views.

Stakeholder responses to the July 2013 FAMR Consultation

17.8 All respondents to this question agreed with our proposal to continue to require BT to provide wholesale ISDN30 (together with reasonably necessary ancillary services). While not disagreeing with the proposal in principle, BT stated that if it was required to provide wholesale ISDN30, it should not be required to invest further in ISDN30 capacity.1187

17.9 Vodafone requested that we impose a remedy on BT that provided customers of BT’s Featurenet product with a means to migrate to another supplier, though acknowledged that the “Featurenet product may not fit formally under the ISDN30 banner.”1188

Analysis including Ofcom response to stakeholder responses

17.10 As our assessment of the wholesale ISDN30 market shows, the level of investment required by a third party to replicate BT’s CGA network on a sufficiently large scale to compete at this level is a significant barrier to entry in this market. Also as noted in Section 4, while ISDN30 is gradually declining, there remains demand for wholesale ISDN30 services and we expect this to continue during the period of this market review.

17.11 We are of the view that in the absence of requiring access to BT’s infrastructure for the purposes of providing retail CGA services, BT would have an incentive and ability to refuse access at the wholesale level and thereby favour its own retail operations with the effect of hindering sustainable competition in the corresponding downstream markets, ultimately against end-users’ interests. Therefore, a wholesale ISDN30 remedy requiring BT to make available a product that allows other CPs to compete with BT in the provision of retail ISDN30 services is necessary to address directly BT’s SMP in the wholesale ISDN30 market.

17.12 Given that there is still demand for ISDN30 over the forward look of our market review, it is important that BT continues to supply ISDN30 services, including ancillary services which are reasonably necessary for the provision of ISDN30. We note that stakeholders responding on this agreed with maintaining wholesale ISDN30 as a remedy.

17.13 We note BT’s view that the requirement to supply wholesale ISDN30 should not require it to invest further in ISDN30 capacity, but we do not consider it appropriate to make the obligation conditional on BT’s investment plans. Having said this, we note that the market circumstances specific to ISDN30 services mean BT’s broader concern is likely to be theoretical. Given demand is forecast to fall over the period covered by this review, it is unlikely that BT will find it needs to undertake any significant investment to support wholesale ISDN30 during this period. Indeed, as discussed further below in paragraph 17.56, BT has previously indicated to us that the main capital assets used in the provision of wholesale ISDN30 (i.e. line cards and concentrators) are no longer in manufacture and that to serve new demand it is currently re-using its existing stock.

17.14 With respect to Vodafone’s concern about the ability of customers to migrate from BT’s Featurenet product to another supplier, we are of the view that Featurenet is an IP-based service rather than an ISDN30 service (although we understand that ISDN30 can be supplied as an input into the Featurenet service). As such, as Vodafone broadly accepts, we are of the view that Featurenet services are outside the ISDN30 market and do not fall within the scope of any of the other markets covered by this review. We understand that Featurenet is a complex product and that there is no migration process for it. If this remains an issue we would suggest that Vodafone raise this through existing industry processes, at least in the first instance.

Conclusion

17.15 For the reasons set out above, we have decided to require BT to provide wholesale ISDN30 services, including ancillary services which are reasonably necessary for the provision of wholesale ISDN30.

17.16 The condition is set out in full in Annex 29.
17.17 The obligation to provide wholesale ISDN30 services is on the basis of fair and reasonable terms and conditions (and in some cases, charges) and in line with the requirement to provide network access on reasonable request as set out in Section 10.

Legal tests

17.18 We consider that the obligation to provide wholesale ISDN30 services, together with such ancillary services as may be reasonably necessary for the use of those services, is appropriate and satisfies the legal tests set out in the CA03.

17.19 Section 87(3) of the CA03 authorises Ofcom to set SMP services conditions requiring the dominant provider to provide such network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within the periods and at the times required by or under the conditions.

17.20 In setting this condition, we have taken into account the factors set out in section 87(4) of the CA03. In particular, when considering the economic viability of CPs building alternative access networks that would make wholesale access to ISDN30 unnecessary, we are of the view that this is unlikely given the costs involved and the transition from CGA to NGA networks. Further, we consider that it is entirely feasible for BT to provide wholesale ISDN30 services in light of their very widespread existing provision. We consider the condition should also continue to ensure that the need to secure effective competition in the long term is met.

17.21 We consider that the condition, in particular, furthers the interests of citizens in relation to communications matters and furthers the interests of consumers in relevant markets in line with section 3 of the CA03 by encouraging competition in ISDN30 exchange line services at the retail level.

17.22 We also consider that the condition meets the requirements set out in section 4 of the CA03. As noted above, the condition promotes efficiency and sustainable competition and the maximum benefit for customers by enabling providers to compete in downstream access markets.

17.23 We consider the condition meets the criteria set out in section 47(2) of the CA03. The condition is:

- objectively justifiable, in that it seeks to ensure that competition develops in downstream markets for the benefit of consumers. Competition based on wholesale ISDN30 has delivered benefits to consumers in terms of choice, value for money, price and quality. Removing the obligation to provide wholesale ISDN30 may result in BT withdrawing the product or otherwise changing it to the detriment of the retail competition that has developed;

- not unduly discriminatory, in that the condition aims to address BT’s market power only in the market in which we find it has SMP (namely, the UK excluding the Hull Area). As noted earlier, while we find KCOM to have SMP in the wholesale ISDN30 market in the Hull Area, we consider that imposing specific network access remedies on KCOM in the absence of clear evidence of demand to be disproportionate and inappropriate at this time (rather we consider that the
obligation imposed on KCOM to provide network access on reasonable request is sufficient to ensure that KCOM provides wholesale ISDN30 services should a reasonable request be made in the Hull Area);

• proportionate, in that the requirement is necessary, but no greater than necessary, to promote efficiency and sustainable competition for the maximum benefit of customers of communications providers, but, as discussed above, is not unduly burdensome on BT; and

• transparent, in that it is clear in its intention to ensure that BT provides the wholesale ISDN30 services and reasonably necessary ancillary services to other CPs.

17.24 We now discuss our approach to the pricing of wholesale ISDN30 services.

**Wholesale ISDN30 pricing approach**

**Policy proposals as set out in the July 2013 FAMR Consultation**

17.25 In the July 2013 FAMR Consultation, we proposed to continue to impose a charge control on BT for wholesale ISDN30 and certain ancillary services. However, we did not propose imposing an additional Basis of charges obligation for these products as we considered that this would be unnecessary and disproportionate.

17.26 In the July 2013 FAMR Consultation, we asked:

15.2 *Do you agree with our charge control proposals for ISDN30? Please provide reasons in support of your views.*

**Stakeholder responses to the July 2013 FAMR Consultation**

17.27 Stakeholders agreed with our proposal to impose a charge control (and not to impose an additional Basis of charges obligation) on BT for wholesale ISDN30 services.

**Analysis including Ofcom response to stakeholder responses**

17.28 In light of our finding that BT has SMP in the wholesale ISDN30 market in the UK excluding the Hull Area, our competition concern is that without a regulatory constraint on charges BT would have the ability and incentive to set excessive charges for wholesale ISDN30 (i.e. above the competitive level).

17.29 ISDN30 use is declining and CPs are gradually substituting to new technologies. Therefore, in setting a suitable pricing remedy for this particular market we also want to ensure prices which encourage efficient migration from declining wholesale ISDN30 services to newer replacements (e.g. IP-based services), and which encourage efficient investment in new technologies.

17.30 Below, we set out our views on two alternative pricing options to address our competition concerns:
- a Basis of charges obligation (cost orientation)\textsuperscript{1189}; and
- a charge control.

17.31 We also set out our view that it is neither necessary nor proportionate to impose both a charge control and a Basis of charges obligation concurrently.

17.32 We consider that wholesale ISDN30 services are in a market with limited competition and are critical to retail competition, which may suggest that a strict approach to pricing is appropriate. We also recognise that ISDN30 is a declining product and that, for declining products in general, we consider that a safeguard cap or cost orientation might be appropriate.\textsuperscript{1190}

**Basis of charges – cost orientation**

17.33 A Basis of charges obligation could limit price increases for wholesale ISDN30 services by providing a cost-based benchmark while avoiding the need for a charge control. It could also be used to allow prices to reflect changes in actual costs.

17.34 We have considered whether it would be appropriate to apply a more specific form of cost orientation for wholesale ISDN30 services in the market by specifying a cost orientation standard in the SMP conditions and also possibly by specifying the types of common costs that we consider it appropriate to be included. For example, we could specify whether wholesale ISDN30 services should be set with reference to FAC, DSAC or DLRIC.

17.35 However, we note that requiring the wholesale ISDN30 charge to be set at any of the reported cost figures (FAC\textsuperscript{1191}, DSAC or DLRIC) could risk prices being set at the wrong level for the market and so risks not meeting our concerns. This is because we believe that the reported cost orientation standards for wholesale ISDN30 in BT’s RFS are not likely to reflect a reasonable level of cost, particularly given the fact that much of the wholesale ISDN30 asset base is already heavily depreciated.\textsuperscript{1192}

17.36 The Basis of charges obligation would allow prices to reflect changes in costs on an annual basis. We note that, historically, the FAC, DSAC or DLRIC benchmarks reported by BT exhibit a volatile trend, suggesting that such an approach to setting charges at their reported level could potentially lead to significant fluctuations over the forward look period of our review.\textsuperscript{1193} We believe this would create pricing


\textsuperscript{1191} We use FAC interchangeably for LRIC+ in this instance, as this can be typically a reasonable approximate for LRIC+.

\textsuperscript{1192} We would need to adjust the levels of FAC to take account of the heavily depreciated nature of the assets (in a similar way to our approach in the 2012 ISDN30 Charge Control Statement) because, while in accounting terms the assets have been fully depreciated, the products are still being used. This means that the assets’ accounting value, as reflected in the ISDN30 reported FAC level, may underestimate their true economic value, and so would need to be upwardly adjusted to reflect this value.

\textsuperscript{1193} For example, the FAC (which is typically a reasonable proxy for LRIC+) for Rentals, as reported in the BT RFS in the period 2007/08-2009/10, exhibits yearly variations equal to -10.5% and +10.1% between each of these years.
uncertainty, and may risk sending the wrong signals for efficient migration from declining ISDN30 services and inappropriate signals for investment in other technologies (e.g. IP-based technologies).

Charge control

17.37 We have considered whether it is appropriate and proportionate to impose a charge control which would set prices for the period of the market review for wholesale ISDN30 services.

17.38 The aim of a charge control would be to prevent excessive pricing (i.e. pricing above the competitive level), while encouraging efficient migration from declining wholesale ISDN30 services to newer replacements (e.g. IP-based services). We believe that a well designed charge control which sets prices so they are constrained to a reasonable level would achieve this aim, and would also avoid the risk that BT’s RFS do not reflect a reasonable level of cost. Moreover, we consider that this approach would provide further certainty to the market as prices would be set in advance, and so prices would not be subject to the same risk of fluctuations as under a Basis of charges obligation. We believe this certainty would help encourage efficient migration from declining wholesale ISDN30 services and efficient investment in newer technologies.

Conclusion

17.39 We have assessed the merits of imposing a charge control remedy or a Basis of Charges obligation, and are of the view that, given the circumstances of the ISDN30 market, the imposition of a charge control would be more appropriate than a Basis of charges obligation because it would allow prices to better reflect a reasonable level of cost and therefore constrain the risk of excessive pricing. A charge control would also provide more pricing certainty than a Basis of charges obligation which is particularly desirable given the historical volatility of the DLRIC, DSAC and FAC benchmarks reported by BT and the desirability of encouraging efficient migration from declining ISDN30 services to newer technologies.

17.40 We have therefore decided to impose a charge control on BT for wholesale ISDN30 services (including certain ancillary services). We set out our specific approach to the form, level and structure of the wholesale ISDN30 charge control below. For the reasons given below, we consider that this approach addresses our concerns in the wholesale ISDN30 market of a relevant risk of adverse effects arising from a price distortion if BT sets prices at an excessively high level for wholesale ISDN30 services.

17.41 We have also considered whether we should have a Basis of charges obligation in addition to that charge control. We consider that the reasoning for ISDN30 is essentially the same for LLU and WLR (WFAEL) as set out in Sections 13 and 15 and that it would be unnecessary and disproportionate to impose an additional Basis of charges obligation. On that basis, our conclusion is not to implement a Basis of charges obligation alongside a charge control.

17.42 We now consider the detailed structure of the charge control.
Wholesale ISDN30 charge control

Proposals in July 2013 FAMR Consultation and December 2013 LLU WLR Consultation

17.43 In the July 2013 FAMR Consultation, we proposed the following for the wholesale ISDN30 charge control:1194

- a basket of ISDN30 rentals, connections and enhanced care services, with a cap on average charges based on their current levels. We proposed to set this in nominal terms for 1 April 2014 to 31 March 2017, which means average charges would fall in real terms (i.e. after taking into account general inflation);

- a subcap of +5% per annum for the average charges for ISDN30 connections allowing BT the freedom to set the individual per-installation and per-channel charges subject to the overall subcap (and the basket charge control referred to above);

- a subcap of 0% per annum for each of the ISDN30 enhanced care services. Should BT replace these services, such replacement services would also be within the scope of the control; and

- separate charge controls on each of ISDN30 transfers, DDI planning, DDI connections and DDI rentals, such that each charge would be capped at its current level in nominal terms during the market review period, which means that each charge would fall in real terms with general inflation.

17.44 We also proposed the following rules in order to determine compliance with any future charge controls:

- the average price change BT should be allowed to make in the second and third year of the control should reflect whether its actual price change in the previous year was in line with the maximum allowed under the charge control;1195 and

- BT should be required to supply information in order for us to monitor its compliance with the control. Consistent with the obligations in place in the existing wholesale ISDN30 charge control, this information would be required to be supplied by BT on an annual basis.

1194 See paragraphs 15.43-15.76 of Ofcom, Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - Consultation on the proposed markets, market power determinations and remedies, 3 July 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/summary/fixed-access-markets.pdf.

1195 That is, if BT’s average price change for the basket were lower than required by the charge control at the end of a charge control year, it would be able to increase average prices to compensate for this in the following charge control year. This means that the benchmark for assessing BT’s compliance with the control in the following year would be the level of charges BT would ordinarily be permitted to achieve (were it to charge, on average, the highest amount permitted by the charge control), including any adjustment from the prior year. Conversely, if its average charge were higher than the required level, it would be required to ensure that the average price change in the next year were lower than it would otherwise be so as to ensure that it does not over-recover. In the last year of the control, if BT were likely to fail to secure that the change in price of a controlled service does not exceed the control, then Ofcom could direct that BT should make an appropriate adjustment to its charges in order to prevent over-recovery.

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17.45 In the 2013 December LLU WLR Consultation, we proposed to modify the charge control formulae proposed for wholesale ISDN30 in the July 2013 Consultation (and ISDN2)\(^{1196}\):

- to better incentivise compliance with the charge control by requiring Openreach to automatically repay any excess revenue to affected CPs where the change in relevant wholesale ISDN30 charges in any year exceeds that permitted under the charge control; and

- to improve clarity by aligning the presentational structure of the charge control formulae included in this market review and in other charge controls as closely as possible (by means of adopting the form of the charge control conditions used in the 2013 Narrowband Market Review).

**Stakeholder responses to the July 2013 FAMR Consultation and December 2013 Consultation**

17.46 EE\(^{1197}\) and Vodafone\(^{1198}\) both agreed with Ofcom’s proposal to impose a charge control on BT for wholesale ISDN30 services.

17.47\(^{[\bull]}\) agreed with the imposition of a charge control in principle. However, it stated its preference for single controls on each relevant product, expressing concern that, in a declining market where there was migration to next generation technology, a charge control basket allowed BT to “game the situation”.\(^{1199}\)

17.48 Verizon also considered that Ofcom should impose a separate charge control on each of the relevant wholesale ISDN30 services. It expressed concern that price flexibility in a declining market allowed BT to distort the market to its advantage and to the detriment of consumers.\(^{1200}\)

17.49 Virgin considered Ofcom was taking a pragmatic approach, but cautioned that we should ensure that the control did not become overly restrictive if there were any significant upward cost trends within the market. Virgin stated that a significant drop in actual volumes could result in increased costs which would not be reflected in the proposed control, which could skew migration incentives. To this end, it suggested “a more neutral approach, even to a limited extent, of flat real rather than flat nominal pricing combined with a commitment to continually monitor the market, would provide some security against prices being driven to an artificially low level.”\(^{1201}\)

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\(^{1197}\) P.21, EE response to July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf.


\(^{1199}\) [\bull]\(^{[\bull]}\)


17.50 BT considered that Ofcom should remove pricing regulation in the wholesale ISDN30 market as it considered strong market constraints existed. However, if a charge control were imposed, it said it did not disagree with Ofcom’s proposals to generally maintain charges at the current level. In response to the July 2013 FAMR Consultation, BT stated that the same formula and language used in the legal instrument should be used in the WLR and LLU Charge Control legal instrument. As noted in paragraph 17.45, we sought to achieve this in the December 2013 LLU WLR Consultation.

17.51 BT noted that it preferred a simply structured charge control which afforded commercial flexibility. In particular, rather than our proposals as set out in paragraph 17.43 above, it preferred a combined basket for wholesale ISDN30 rentals, connections and enhanced care services requiring charges to remain at their current levels, and separate controls on each of transfers, DDI planning, DDI connections and DDI rentals.

17.52 In response to the July 2013 FAMR Consultation, BT also noted that the proposed legal conditions involved the use of a weighted annual average charge. It said that this would mean that some charges needed to increase on 1 April 2014 in order for prices to stay flat relative to what they had been on average during the prior year. It suggested that Ofcom could avoid this by stating that the relevant starting charge for the first year of the control was the charge that was in effect at 31 March 2014 (and, therefore, avoiding the use of a weighted annual average).

Analysis including Ofcom response to stakeholder responses

Level of the ISDN30 wholesale charge controls

17.53 Our aim in controlling wholesale ISDN30 charges is to promote efficiency and protect consumers from excessive price rises. To set this charge control, we considered whether to undertake a detailed modelling exercise as we did for the 2012 ISDN30 Charge Control Statement, or whether a simpler approach would now be more proportionate and appropriate. For the reasons given below, we have decided that it would be appropriate to adopt a simpler approach that caps charges at their current levels.

17.54 The 2012 ISDN30 charge control was imposed fairly recently and imposed a substantial reduction in charges. It imposed a price cap of RPI-13.75% per year on the main basket of rental and connection services for the nearly two-year duration of that charge control. This was because the reduction in costs over time had not led to a corresponding reduction in charges, rather than because unit costs were falling rapidly. In fact, the underlying unit cost trend in the model used to set the 2012 ISDN30 charge control was slightly upward. This was largely a result of falling volumes which meant increasing unit costs due to reducing benefits from economies of scale.

1202 For example, it pointed out that the connection per channel charge was reduced from £5.50 to £3.50 on 1 August 2013, creating a weighted average price for 2013/14 of £4.17, which is higher than the price as at March 2014 of £3.50.

17.55 Actual volumes appear to have declined less than forecast in the 2012 ISDN30 Charge Control Statement. This might suggest that the charge control is currently higher than it needs to be. However, we expect volumes to continue to fall over the market review period, with volumes in 2016/17 likely to be below those originally forecast for 2013/14 in the 2012 ISDN30 Charge Control Statement. This would imply charges tending to rise slightly in the future if we again set charges based on a detailed model similar to that used previously, as the benefits of economies of scale reduce further. However, for the reasons set out below, we do not consider that going forward such an approach would promote efficiency and protect consumers. We consider that maintaining charges consistent with the current level is more likely to promote economic efficiency than allowing charges to rise.

17.56 We consider it unlikely that BT will need to undertake any significant capital expenditure to support wholesale ISDN30 in the future. Indeed, BT indicated to us during the last market review that the main capital assets used in the provision of ISDN30 (i.e. line cards and concentrators) are no longer in manufacture and that to serve new demand it is currently re-using its existing stock.\(^{1204}\) We consider that BT is able to avoid any significant capital expenditure because demand is expected to continue falling.

17.57 In the absence of a need for future investment in ISDN30, we consider it may be unnecessary for efficiency that future charges reflect a hypothetical ongoing network in a steady state. Rather, it may be efficient for ISDN30 prices to be below the steady state level. This would align charges more closely to forward looking incremental costs, given that no significant new investment is foreseen.

17.58 However, if charging below the hypothetical ongoing steady state level would mean that BT would not have had a reasonable opportunity to recover its efficiently incurred costs, then there may be a risk to future investment incentives more generally. In particular, in these circumstances BT may be disincentivised from making investments in other services unrelated to ISDN30.

17.59 We therefore see the question of whether BT would have a reasonable opportunity to recover its efficiently incurred costs if charges were not allowed to rise as being important to our consideration of how to set charges for the market review period.

17.60 Unfortunately, it is not easy to determine what would be required to allow BT a reasonable opportunity to recover its efficiently incurred costs. This is because there is no robust data on ISDN30 capital expenditure, operating expenditure, and revenues for the early years of the service after it began in 1986.

17.61 While we do not have robust data on costs and revenues over the full life of the assets, more recent data is available. Revenues and operating costs from 2004 are shown in Table 17.1, using data from BT’s RFS.\(^{1205}\)


\(^{1205}\) BT’s RFS for recent years are available here: [www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/index.htm](http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/index.htm). We have not shown the figures from BT’s 2012/13 RFS, for the reasons explained in Annex 22.
Table 17.1: BT’s income from ISDN30

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<tr>
<td>Sales (£m) (internal and external)</td>
<td>281</td>
<td>325</td>
<td>325</td>
<td>334</td>
<td>339</td>
<td>348</td>
<td>320</td>
<td>319</td>
<td>305</td>
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<td>Operating costs (£m)</td>
<td>206</td>
<td>180</td>
<td>191</td>
<td>156</td>
<td>149</td>
<td>124</td>
<td>110</td>
<td>134</td>
<td>129</td>
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<tr>
<td>Operating profit (£m)</td>
<td>75</td>
<td>145</td>
<td>134</td>
<td>178</td>
<td>190</td>
<td>224</td>
<td>210</td>
<td>185</td>
<td>176</td>
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<tr>
<td>Capital employed (£m)</td>
<td>566</td>
<td>473</td>
<td>398</td>
<td>336</td>
<td>295</td>
<td>301</td>
<td>302</td>
<td>274</td>
<td>240</td>
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<tr>
<td>Return on capital employed</td>
<td>13%</td>
<td>31%</td>
<td>33%</td>
<td>53%</td>
<td>64%</td>
<td>74%</td>
<td>70%</td>
<td>67%</td>
<td>74%</td>
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Source: BT Regulatory Financial Statements

17.62 Table 17.1 shows high returns on capital employed for the period from 2004 to 2013. In its response to the July 2013 FAMR Consultation, BT did not raise a concern that it would not achieve cost recovery over the life-time of the assets with the charge controls we proposed. Given the high returns since 2004 and that BT has not raised cost recovery concerns with our proposals, we consider it likely that BT will have recovered its past investments if charges remain at the level imposed by the 2012 charge control during the market review period. In the absence of robust data showing that cost recovery will not otherwise be achieved, we consider that constant nominal charges are likely to be sufficient to ensure cost recovery. We therefore do not believe it would be necessary for prices to increase in real terms (as suggested by Virgin) in order to ensure recovery by BT of its efficiently incurred costs, and that it would be more in consumers’ interests to have constant nominal prices.\textsuperscript{1206}

17.63 While we do not see a strong reason to allow ISDN30 charges to increase from their 2013/14 level, we also consider that it may not be efficient or in consumers’ interests for charges to fall materially. Materially lower charges may risk that cost recovery is not achieved and may therefore undermine future investment incentives in other products. Also with substantially lower prices, the decline in ISDN30 volumes may reverse, which would then require new ISDN30 investment which the charge control may not be sufficient to cover. Materially lower ISDN30 charges may also undermine recent investment in IP-based services, which could create a perception of regulatory uncertainty (which may again damage investment incentives in the longer term, harming efficiency). Ultimately, this could be against consumers' interests.

17.64 We also consider that this approach to setting the ISDN30 charge control during the market review period would involve a smaller burden on CPs (especially BT) in terms of gathering information and reviewing our detailed charge control modelling. Undertaking a more detailed assessment would not remove the uncertainty on costs and revenues in the early years of ISDN30 services for the reasons explained above and would, therefore, be disproportionate. It would therefore not enable us to reach a more robust judgment as to the efficient level of prices in the future.

17.65 For the reasons set out above, we have decided to require BT to maintain constant nominal prices during the market review period. As described below, we have done

\textsuperscript{1206} Virgin cautioned that we should ensure that the control did not become overly restrictive if there were any significant upward cost trends within the market. However, looking at past operating costs, we see no evidence of upward cost trends. See page 26, Virgin response to July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Virgin_Media.pdf.
this in a way that gives BT some (limited) pricing flexibility rather than capping all prices at their current level.

17.66 This decision is in line with our proposals in the July 2013 FAMR Consultation for which stakeholder responses were generally in favour.

**Basket structure for the wholesale ISDN30 charge control**

17.67 We have decided to adopt the same structure as that used in the ISDN30 charge controls currently in place. Specifically, we have decided to impose:

- a combined basket for wholesale ISDN30 rentals, connections and enhanced care services requiring charges to remain at their current levels (that is, to be constant in nominal terms, and falling in real terms with inflation). This will allow BT some flexibility to rebalance within this basket. This will be combined with sub-caps on separate sub-baskets covering connection prices and enhanced care services. The subcap on the connection price will be +5% per annum and the subcap on the enhanced care prices will be 0% per annum; and

- separate controls on each of ISDN30 transfers, DDI planning, DDI connections and DDI rentals, set to prevent such charges from rising from their current levels.

17.68 We consider it remains appropriate to give BT some flexibility on individual charges so are adopting this basket approach. This flexibility could enable BT to reflect movements in costs in charges. For example, if the relative costs of providing standard care and enhanced care changed, BT could adjust the relative charges. We therefore consider that Verizon’s submissions that we should impose separate charge controls on each relevant product do not cause us to change our approach.

17.69 However, we also consider that some additional controls remain necessary. In particular, we consider the separate control on ISDN30 transfers is important because, if it were in the same basket as other services, especially rentals, BT may have an incentive to meet the charge control by concentrating reductions on the rental prices while increasing the transfer prices. We are particularly concerned about the level of the transfer price because of its importance to switching and competition at the retail level. Because of the importance of the transfer price for competition, in the 2012 ISDN30 Charge Control Statement we set the ISDN30 transfer charge to be below fully allocated costs. We continue to consider this appropriate and consider that maintaining the charge at its current level will achieve this.

**Starting prices for wholesale ISDN30 charge control**

17.70 We proposed in the legal conditions in the July 2013 FAMR Consultation to link the charge controls to the weighted average annual charges during 2013/14. In its response, BT pointed out that it would be required to increase charges compared to the level in March 2014, as some charges were reduced during August 2013.1208

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Given our intention to limit charges to their current levels, we have decided to change the legal conditions so that (in the first year of the charge control) the charges will be set by reference to the charges on 31 March 2014. This means that charges will be slightly lower than they would have been under the charge control condition proposed in the July 2013 FAMR Consultation, although this is consistent with our intention of keeping charges at their current level.

**Conclusion**

17.71 We have decided to impose the following on BT for the wholesale ISDN30 charge control:

- a basket of ISDN30 rentals, connections and enhanced care services, with a cap on average charges based on their current levels. We have decided to set this in nominal terms from 1 July 2014 to 31 March 2017, which means average charges would fall slightly in real terms (i.e. after taking into account general inflation). The nominal terms cap (for the purpose of the first year of the charge control) is set by reference to prices as they were in March 2014;

- a subcap of +5% per annum for the average charges for connections allowing BT the freedom to set the individual per-installation and per-channel charges subject to the overall subcap (and compliance with the general basket charge control referred to above);

- a subcap of 0% per annum for the average charges for enhanced care services. Should BT replace these services, such replacement services would also be within the scope of the control; and

- separate charge controls on each of ISDN30 transfers, DDI planning, DDI connections and DDI rentals, such that each charge is capped at its current level in nominal terms during the market review period, which means that each charge would fall in real terms with general inflation.

17.72 The legal condition is set out in full in Annex 29.

**Legal tests**

17.73 For the reasons set out in Section 19 we are satisfied that the charge control condition for BT on wholesale ISDN30 services meets the tests set out in the CA03.

**Cost accounting on BT for the wholesale ISDN30 market**

**Policy proposals as set out in the July 2013 FAMR Consultation**

17.74 Given that we did not propose imposing a Basis of charges obligation in the July 2013 FAMR Consultation, we proposed that we would not require BT to report DLRIC and DSAC for wholesale ISDN30 services. This was consistent with our proposals in relation to LLU and WLR services. However, we proposed that BT should be required to maintain DLRIC and DSAC data.

17.75 We said that it would not be appropriate to require cost reporting in the RFS for ISDN30 services on a FAC basis, but proposed that BT should maintain this data.

17.76 We asked the following consultation question.
**Stakeholder responses to the July 2013 FAMR Consultation**

17.77 BT said that it agreed with the proposal not to require the publication of FAC, DLRIC and DSAC information at a service level. However, it queried the usefulness of cost accounting information for ISDN30, and so disagreed with our proposal to maintain FAC, DLRIC and DSAC data in the absence of a basis of charges obligation (and in particular, argued that the maintenance of DLRIC and DSAC data would be a new requirement).\(^{1209}\)

17.78 Virgin, on the other hand, suggested that reporting of FAC would be useful for stakeholders and would not be unduly onerous on BT. It expressed concern that there was a risk of increased costs during the review period, and so stated that it was important that cost trends were visible to ensure that the proposed remedy remained appropriate throughout the review period.\(^{1210}\)

17.79 Verizon stated that there should be no reduction in the information provided currently by BT, but did not provide any reasoning specific to ISDN30.\(^{1211}\)

**Analysis including Ofcom response to stakeholder responses**

17.80 We have published the 2014 Regulatory Financial Reporting Statement\(^{1212}\), setting out our revised cost accounting condition. We will subsequently be issuing cost accounting Directions pursuant to the Regulatory Financial Reporting Statement setting out the form of reporting for the RFS. We describe here our policy as to what we expect to include in the cost accounting Direction. In considering this issue for ISDN30, we have first considered whether it is appropriate to include in the cost accounting Direction a specific requirement for BT to publish cost data, before then considering whether the inclusion of a specific obligation for BT to maintain cost data in the Direction is appropriate.\(^{1213}\)

17.81 In line with our consultation proposals, we remain of the view that we should not impose an obligation on BT to publish FAC, DLRIC or DSAC data for ISDN30. This is because, as set out in the consultation, wholesale ISDN30 cost data is potentially distorted as a result of heavily depreciated assets, which means that cost information such as FAC (or indeed DLRIC and DSAC) does not reflect the true costs of providing the service. As such, we continue to consider that it could be a source of potentially misleading information for stakeholders if this data were published. Therefore, contrary to Virgin’s view, it is not clear that such data would indeed be useful for stakeholders (or for us), a point also made by BT in its consultation response. We also note that not requiring the publication of DLRIC and DSAC data is

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\(^{1209}\) Paragraphs 429-430, *BT response to July 2013 FAMR Consultation,*
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.

\(^{1210}\) P.26, *Virgin response to July 2013 FAMR Consultation,*
http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Virgin_Media.pdf.

\(^{1211}\) Paragraphs 47 and 51, *Verizon response to July 2013 FAMR Consultation,*

\(^{1212}\) Ofcom, *Regulatory Financial Reporting: Final Statement,* 20 May 2014,

\(^{1213}\) Note, we set out our cost accounting policy for TRCs in Section 18.
consistent with our approach and reasoning in other recent decisions where we have removed Basis of charges obligations (and with our decisions in the remainder of this Statement)\(^{1214}\), and we consider that not requiring the publication of FAC is consistent with our position set out in our recent statement on changes to BT and KCOM’s regulatory and financial reporting 2012/13 update.\(^{1215}\)

17.82 Although we consulted on requiring BT to maintain FAC, DLRIC and DSAC data, on further reflection, and in light of consultation responses, we consider that specific cost accounting requirements for the maintenance of such data for ISDN30 would not be appropriate. In particular, given the approach to setting the ISDN30 charge controls (set out above) and the potential distortions within the ISDN30 cost data we have set out, we consider that FAC, DLRIC and DSAC data would provide limited insight into the effectiveness of our remedies during this review period. It would also be of limited benefit for transparency of cost purposes. We consider that this weakens the case for imposing cost accounting obligations for the maintenance of such data, irrespective of whether such cost data is onerous or otherwise to provide (as argued by Virgin), as the obligation must be objectively justifiable and proportionate, which for these reasons we do not consider to be the case. Further, our intention in the consultation was not to increase the cost accounting requirements on BT, and so in this regard we note that BT is not currently required to maintain DLRIC and DSAC data, as noted by BT in its consultation response.

17.83 Therefore we consider that it would not be appropriate to impose specific cost accounting requirements in the cost accounting Direction for ISDN30 for this market review period.

**Requirement for BT to provide wholesale ISDN2**

17.84 Wholesale ISDN2 (also known as Basic Rate ISDN) is a digital telephone service that provides two digital channels with a bandwidth of 64kbit/s each and a control channel of 16kbit/s on a single exchange line. It is predominantly a business product, which supports a wide range of services, including basic telephony with additional features to those available on analogue lines.

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\(^{1214}\) Specifically, given we are not imposing a Basis of charges obligation, we do not consider it necessary for CPs to have access to DLRIC and DSAC in order to monitor compliance. Ofcom, Business connectivity market review - final statement, 28 March 2013, [http://stakeholders.ofcom.org.uk/consultations/business-connectivity-mr/final-statement/](http://stakeholders.ofcom.org.uk/consultations/business-connectivity-mr/final-statement/) and Ofcom, Review of the fixed narrowband services markets, September 2013, [http://stakeholders.ofcom.org.uk/consultations/nmr-13/statement/](http://stakeholders.ofcom.org.uk/consultations/nmr-13/statement/).

\(^{1215}\) We considered that the current level of reporting in the RFS was sufficient to demonstrate compliance with the updated ISDN30 charge control and therefore no amendments to the RFS were necessary as a result of the 2012 ISDN30 Charge Control Statement. We said that a charge control of this kind can be monitored by reference to prices rather than costs and so additional cost information was not required. FAC did not reflect the true costs of providing the service (in particular due to potential distortions to FAC of ISDN30 as a result of heavily depreciated assets) and the charge control was based on Ofcom’s adjusted cost stack. This was because the adjustments we made in setting the charge control, e.g. an uplift to the fully depreciated assets, changed the cost stack significantly. We therefore considered that cost reporting would not be beneficial to stakeholders in this case (P.23, Ofcom, Changes to BT and KCOM’s regulatory and financial reporting 2012/13 update, 25 April 2013, [www.stakeholders.ofcom.org.uk/consultations/bt-kcom-reporting-2012-13/?a=0](http://www.stakeholders.ofcom.org.uk/consultations/bt-kcom-reporting-2012-13/?a=0)).
Policy proposals as set out in the July 2013 FAMR Consultation

17.85 In the July 2013 FAMR Consultation, we proposed to require BT to provide wholesale ISDN.

17.86 In the July 2013 FAMR Consultation, we asked:

15.4 *Do you agree with our proposal to continue to require BT to provide wholesale ISDN2? Please provide reasons in support of your views.*

Stakeholder responses to the July 2013 FAMR Consultation

17.87 All respondents to this question agreed with Ofcom’s proposal to continue to require BT to provide wholesale ISDN2 (together with reasonably necessary ancillary services). While not disagreeing with the proposal in principle, BT stated that, if it was required to provide wholesale ISDN2, it should not be required to invest further in ISDN2 capacity.\(^{1216}\)

Analysis including Ofcom response to stakeholder responses

17.88 As our assessment of the wholesale ISDN2 market shows, the level of investment required by a third party to replicate BT’s CGA network on a sufficiently large scale to compete at this level is a significant barrier to entry in this market. Also as noted in Section 5, while ISDN2 is gradually declining, there remains demand for wholesale ISDN2 services and we expect this to continue during the period of this market review.

17.89 We note that, overall, no stakeholder argued for wholesale ISDN2 to be removed as a remedy. We are of the view that in the absence of requiring access to BT’s infrastructure for the purposes of providing retail CGA services, BT would have an incentive and ability to refuse access at the wholesale level. This would enable it to favour its own retail operations with the effect of hindering sustainable competition in the corresponding downstream markets, ultimately against end-users’ interests. Therefore, we continue to consider that a wholesale ISDN2 remedy is necessary to address directly BT’s SMP in the wholesale ISDN2 market.

17.90 Such a remedy would require BT to make available a product which allows other CPs to compete with BT in the provision of retail ISDN2 services on an equivalent basis. We note BT’s view that the requirement to supply wholesale ISDN2 should not require it to invest further in ISDN2 capacity. BT must ensure sufficient capacity is available for the supply of wholesale ISDN2. Having said this, in any case we note that the market circumstances specific to ISDN2 services mean BT’s broader concern is likely to be theoretical. Given demand is forecast to fall over the period of the review, it is unlikely that BT will be in a position where it needs to undertake any significant investment to support wholesale ISDN2 during this period.

\(^{1216}\) Paragraph 432, *BT response to July 2013 FAMR Consultation*,

http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.
Conclusion

17.91 For the reasons set out above, we have decided to require BT to provide wholesale ISDN2 services, including ancillary services which are reasonably necessary for the provision of wholesale ISDN2.

17.92 The condition is set out in full in Annex 29.

17.93 The obligation to provide wholesale ISDN2 is on the basis of fair and reasonable terms and conditions (and in some cases, charges) and in line with the requirement to provide network access on reasonable request as set out in Section 10.

Legal tests

17.94 We consider that the obligation to provide ISDN2 services, together with such ancillary services as may be reasonably necessary for the use of those services, is appropriate and satisfies the legal tests set out in the CA03.

17.95 Section 87(3) of the CA03 authorises Ofcom to set SMP services conditions requiring the dominant provider to provide such network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within the periods and at the times required by or under the conditions.

17.96 In setting this condition, we have taken into account the factors set out in section 87(4) of the CA03. In particular, when considering the economic viability of CPs building alternative access networks that would make wholesale access to ISDN2 unnecessary, we are of the view that this is unlikely given the costs involved and the transition from CGA to NGA networks. Further, we consider that it is entirely feasible for BT to provide wholesale ISDN2 services in light of their very widespread existing provision. We consider the condition should also continue to ensure that the need to secure effective competition in the long term is met.

17.97 We consider that the condition, in particular, furthers the interests of citizens in relation to communications matters and furthers the interests of consumers in relevant markets in line with section 3 of the CA03 by encouraging competition in ISDN2 exchange line services at the retail level.

17.98 We also consider that the condition meets the requirements set out in section 4 of the CA03. As noted above, the condition promotes efficiency and sustainable competition and the maximum benefit for customers by enabling providers to compete in downstream access markets.

17.99 We consider the condition meets the criteria set out in section 47(2) of the CA03. The condition is:

- objectively justifiable, in that it seeks to ensure that competition develops in downstream markets for the benefit of consumers. The growth of competition based on wholesale ISDN2 has delivered benefits to consumers in terms of choice, value for money, quality and price. Removing the obligation to provide wholesale ISDN2 may result in BT withdrawing the product to the detriment of the retail competition that has developed;
• not unduly discriminatory, in that the condition aims to address BT’s market power only in the market in which we find it has SMP (namely, the UK excluding the Hull Area). As noted earlier, while we find KCOM to have SMP in the wholesale ISDN2 market in the Hull Area, we consider that imposing specific network access remedies on KCOM in the absence of clear evidence of demand to be disproportionate and inappropriate at this time (rather we consider that the obligation imposed on KCOM to provide network access on reasonable request is sufficient to ensure that KCOM provides wholesale ISDN2 services should a reasonable request be made in the Hull Area);

• proportionate, in that the requirement is necessary, but no greater than necessary, to promote efficiency and sustainable competition for the maximum benefit of customers of communications providers, but, as discussed above, is not unduly burdensome on BT; and

• transparent, in that it is clear in its intention to ensure that BT provides the wholesale ISDN2 product and reasonably necessary ancillary services to other CPs.

17.100 We now discuss our pricing approach for wholesale ISDN2 services.

**Wholesale ISDN2 pricing approach**

**Policy proposals as set out in the July 2013 FAMR Consultation**

17.101 In the July 2013 FAMR Consultation, we proposed imposing a charge control on BT for wholesale ISDN2. We did not propose imposing an additional Basis of charges obligation for these products as we considered that this would be unnecessary and disproportionate.

17.102 In the July 2013 FAMR Consultation, we asked:

15.5 Do you agree with our charge control proposals for ISDN2? Please provide reasons in support of your views.

**Stakeholder responses to the July 2013 FAMR Consultation**

17.103 Stakeholders agreed with our proposal to impose a charge control (and not to impose an additional Basis of charges obligation) on BT for wholesale ISDN2 services.

**Analysis including Ofcom response to stakeholder responses**

17.104 In light of our finding of SMP in the wholesale ISDN2 market in the UK excluding the Hull Area, our competition concern is that without a regulatory constraint on charges BT would have the ability and incentive to charge excessively (i.e. above the competitive level) for wholesale ISDN2 services.

17.105 As noted above and in Section 5, wholesale ISDN2 use is declining and CPs are gradually substituting to new technologies. Therefore, in setting a suitable pricing remedy for this particular market, we also want to ensure charges which encourage efficient migration from declining wholesale ISDN2 services to newer replacements (e.g. IP-based services), and which encourage efficient investment in new technologies.
17.106 We have considered a Basis of charges obligation (cost orientation) and a charge control. We recognise that the current situation is different between wholesale ISDN2 and wholesale ISDN30, in that there is already a charge control in place for ISDN30 whereas ISDN2 is currently cost orientated. However, we consider that wholesale ISDN2 and wholesale ISDN30 are similar in that both are in markets with limited competition and are critical to downstream competition, and both are declining products due to substitution to IP-based services. We therefore consider that our assessment of the choice between a Basis of charges obligation and a charge control is substantively the same for wholesale ISDN2 as for wholesale ISDN30 as set out from paragraph 17.28 above. For the same reasons as for wholesale ISDN30, we therefore have decided to impose a charge control on wholesale ISDN2.

17.107 We have also considered whether we should impose a Basis of charges obligation in addition to a charge control. We consider that the reasoning for ISDN2 is essentially the same for LLU and WFAEL as set out in Sections 13 and 15. On that basis, we have decided that it would be unnecessary and disproportionate to implement a Basis of charges obligation alongside a charge control.

Conclusion

17.108 For the reasons set out above, we have decided to impose a charge control on BT for wholesale ISDN2, but we do not impose an additional Basis of charges obligation.

17.109 We now consider the detailed structure of the charge control.

Wholesale ISDN2 charge control

Proposals in the July 2013 FAMR Consultation and December 2013 Consultation

17.110 In the July 2013 FAMR Consultation, we proposed the following for the wholesale ISDN2 charge control:

- a basket of ISDN2 rentals and connections, with a cap on average charges based on their current levels. We proposed to set this in nominal terms for 1 April 2014 to 31 March 2017, which would mean average charges would fall in real terms (i.e. after taking into account general inflation); and

- a separate charge control on ISDN2 transfers set at £10 per channel.

17.111 We also proposed the following rules in order to determine compliance with any future charge controls:

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1218 See paragraphs 15.105 to 15.136 of Ofcom, Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 - Consultation on the proposed markets, market power determinations and remedies, 3 July 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/summary/fixed-access-markets.pdf.
• the average price change BT should be allowed to make in the second and third year of the control should reflect whether its actual price change in the previous year was in line with the maximum allowed under the charge control1219, and

• BT should be required to supply information in order for us to monitor its compliance with the control. This information would be required to be supplied by BT on an annual basis.

17.112 In the December 2013 Consultation, we proposed to modify the charge control formulae proposed in the July 2013 FAMR Consultation for IDSN2, as with ISDN30 (see paragraph 17.45 above).

Stakeholder responses to the July 2013 FAMR Consultation

17.113 Vodafone1220 and EE1221 both agreed with Ofcom’s proposals to impose a charge control for wholesale ISDN2, while [8] stated that it was more “relaxed” about the wholesale charge controls for ISDN2 compared to ISDN30, as it considered there were a wide range of easily deployable alternatives to limit BT’s dominance in this area.1222

17.114 BT also noted the availability of substitutes to ISDN2, and stated that this meant there were no significant barriers to customers switching from ISDN2 services, which BT considered acted as a competitive price constraint. Nevertheless, it considered that in the circumstances, Ofcom’s proposal to impose a charge control was not unreasonable.

17.115 However, BT disagreed with Ofcom’s proposed starting price adjustment to ISDN2 transfer charges, which it was concerned contained no adjustment to allow BT to recover the difference between LRIC and FAC elsewhere, and which BT felt Ofcom had not adequately justified. BT also stated that the legal instrument should contain a description of the notification or implementation timing for the ISDN2 transfer price change.1223

17.116 Virgin accepted Ofcom’s reasoning for not wanting to undertake detailed charge control modelling for the purpose of determining the ISDN2 charge control. However, it expressed concern about how certain Ofcom could be that the LRIC data from BT used to set the ISDN2 transfer was accurate, and therefore how certain Ofcom could be that the price benchmark was appropriately cost-based. Virgin noted that in the 2011 ISDN30 Consultation Ofcom felt unable to rely on LRIC data provided by BT. As with its response above in paragraph 17.49 on ISDN30, Virgin cautioned that Ofcom should ensure that the control did not become overly restrictive if there were any significant cost changes.

1219 See footnote 1195.
1222 [8]
17.117 Virgin disagreed with our proposal to have a one-off adjustment rather than a glide path for the ISDN2 transfer charge. Virgin submitted that “there is no need to radically align pricing to within ‘cost oriented’ bounds”, as, “to the extent that Ofcom is reliant on the historic LRIC data, the current pricing level is set well within its unaudited DSAC”. Virgin considered that the only valid reason for a one-off adjustment in this case was Ofcom’s assertion that it was, in practice, easier to mandate a one-off adjustment rather than setting a glide path. Virgin did not consider this to be an appropriate way to approach pricing regulation.\textsuperscript{1224}

17.118 Verizon agreed with Ofcom’s approach to ISDN2 transfer charging, but stated that it would be preferable for Ofcom to reference the cost in the same way as BT (on a per line basis rather than per channel), expressing concern that, if BT could charge per channel, BT could increase prices. As with its response to the ISDN30 proposals, Verizon expressed concern about setting the price control on a basket of services rather than a separate control on each service.\textsuperscript{1225}

\textbf{Analysis including Ofcom response to stakeholder responses}

\textbf{Current level of ISDN2 revenues compared to costs}

17.119 In BT’s 2011/12 RFS, the return on capital employed for wholesale ISDN2 services was 26.7\%.\textsuperscript{1226} This is considerably higher than the relevant cost of capital. However, the reported figure may be misleading as it appears high because the asset base used is heavily depreciated.

17.120 We found a similar issue for wholesale ISDN30 services and discussed this in the 2012 ISDN30 Charge Control Statement. We considered that an appropriate way of setting ISDN30 charges to 2013/14 was to uplift the heavily depreciated ISDN30 assets to base the controls on the costs of a hypothetical ongoing network in a steady state. As a result of this adjustment, the return on capital employed for the ISDN30 market reduced by 63\% (from 67.1\% to 25\%).\textsuperscript{1227} As set out above, for the next market review period, we propose holding the resulting ISDN30 charges constant in nominal terms.

17.121 Given that ISDN2 rental services are provided using assets that are heavily depreciated, we have explored approximately how the return on capital employed for the ISDN2 services would change if we made a similar adjustment to that for ISDN30 in our 2012 ISDN30 Charge Control Statement.\textsuperscript{1228} As a result of this steady state


\textsuperscript{1227} In BT’s 2012/13 RFS, when shown with the same cost allocations as used in 2011/12, the return on capital employed for wholesale ISDN2 was 29\%. This figure is virtually unaffected by the change in cost allocations methodologies, as it is 29.5\% using the 2012/13 cost allocations.

\textsuperscript{1228} For example, paragraphs 1.6-1.7, Ofcom, Wholesale ISDN30 charge control, 12 April 2012, http://stakeholders.ofcom.org.uk/binaries/consultations/isdn30-price-control/statement/ISDN30_final_statement.pdf.

\textsuperscript{1228} We have adjusted the Net Replacement Cost/Gross Replacement Cost ratio of the main assets and estimated the steady-state costs. On the basis of the Net Replacement Cost and Gross Replacement Cost..
adjustment, the 2011/12 ISDN2 market return on capital employed reduces from the 26.7% identified in BT’s 2011/12 RFS to around 15%. While considerably lower, this is still higher than the WACC that was allowed for ISDN30 in the 2012 ISDN30 Charge Control Statement, which was 9.7%.\textsuperscript{1229} As with the ISDN30 charge control, we believe it more appropriate to consider this adjusted rate of return on capital than the unadjusted return.

17.122 The recent reduction in the ISDN2 rental charge\textsuperscript{1230} will probably reduce BT’s revenues for this service by over 4% compared to what they would otherwise be, and this will tend to reduce the rate of return on capital employed for wholesale ISDN2 services. But we nevertheless anticipate the rate of return being greater than the WACC in the immediate future.

Level of the wholesale ISDN2 charge control

17.123 Given the relatively small, and declining, revenue associated with ISDN2 services, we do not consider that it would be appropriate to forecast ISDN2 unit costs for the market review period. We consider that this would impose a disproportionate burden on CPs (especially BT) in terms of providing the information that would be required to set the charge control and reviewing proposals. This is especially the case given that we anticipate that (even if we undertook detailed modelling), there would remain very considerable uncertainty about the appropriate level of the charge controls.

17.124 We have therefore decided to cap the current levels of most charges in nominal terms for the market review period. We have specified the current charges to include the recent reduction in the rental charge made on 1 December 2013. This means charges would gradually fall in real terms due to general inflation.

17.125 We consider that maintaining the current level of most charges has the further advantage of not undermining recent investment in IP-based services by some CPs. If such recent investment were undermined, it could create a perception of regulatory uncertainty which may damage investment incentives in the longer term, harming efficiency. Ultimately, this could be against consumers’ interests.

17.126 Below we discuss whether it would be appropriate to cap ISDN2 charges on average, or whether each and every ISDN2 charge should be capped at its current level.

Structure of the wholesale ISDN2 charge controls

Current wholesale ISDN2 charges

17.127 There are three main wholesale ISDN2 charges: rental, connection and transfer charges. Table 17.2 shows financial information for these three charges from BT’s 2011/12 RFS. The ISDN2 transfer charge is specified in the table below on a per channel basis (and there are two channels per ISDN2 line). However, as we discuss

\textsuperscript{1229} We have done this calculation using BT’s 2011/12 RFS, rather than its 2012/13 RFS, for the reasons explained in Annex 22.

\textsuperscript{1230} On 1 December 2013, Openreach reduced the ISDN2 rental charge from £111 to £105.96 per channel.
further below, the cost in the ISDN2 transfer row in Table 17.2 actually relates to a number of services, rather than just relating to the ISDN2 transfer service.1231

Table 17.2: BT’s wholesale ISDN2 services for 2011/12, unit costs in £ per channel1232

<table>
<thead>
<tr>
<th></th>
<th>Unaudited (D)LRIC</th>
<th>FAC</th>
<th>Unaudited DSAC</th>
<th>Average price</th>
<th>Revenues</th>
<th>Revenue shares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rentals</td>
<td>45.70</td>
<td>77.36</td>
<td>117.38</td>
<td>110.00</td>
<td>£126m</td>
<td>93%</td>
</tr>
<tr>
<td>Connections</td>
<td>25.00</td>
<td>27.00</td>
<td>64.78</td>
<td>116.49</td>
<td>£8m</td>
<td>6%</td>
</tr>
<tr>
<td>Transfers</td>
<td>9.27</td>
<td>10.74</td>
<td>36.18</td>
<td>5.65</td>
<td>£1m</td>
<td>1%</td>
</tr>
</tbody>
</table>

Sources: BT’s 2011/12 Regulatory Financial Statement

17.128 In October 2012, BT changed its ISDN2 rental, connections and transfer prices to bring them within the reported DSAC and DLRIC figures. Up to this point, the prices had not varied since 2004. The October 2012 price changes were as follows:

- **ISDN2 rentals**: price raised from £110 to £111 per channel, per year;
- **ISDN2 transfers**: price raised from £5.65 to £15 per channel (or from £11.30 to £30 on a per line basis); and
- **ISDN2 connection**: price reduced from £116.49 to £60 per channel.

17.129 On 1 December 2013, BT made a further change to the ISDN2 rental price, reducing it from £111 to £105.96 (per channel per year).1233 As rentals account for the large majority of ISDN2 revenues, this is likely to reduce ISDN2 revenues by over 4% compared to what they would have been previously. Even with this change, rentals remain by far the largest ISDN2 service in terms of revenue.

**Basket for ISDN2 connections and rental charges**

17.130 We do not consider that BT has a strong strategic incentive to distort retail competition through the way it balances the rental and connection charges. We have therefore decided to impose a single basket charge control for the connection and rental charges on the basis that this is more proportionate and allows BT to retain some flexibility over the way in which it meets the charge control. As set out below, we consider the situation is different for the ISDN2 transfer charge and have set a separate charge control for that service.

**Other ISDN2 services**

17.131 In addition to the core rental, connection and transfer ISDN2 charges, we understand that certain related ISDN2 services (such as DDI services) are available. We

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1231 The other services relate to WLR-ISDN2 Conversion (same CP) and PSTN-ISDN2 Conversion (change of CP). We have not imposed charge controls on these services because the revenues are low and these services are not as critical to retail competition as the transfer charge. In its response to question 1 of the s.135 notice of 3 February 2014, BT told us the total revenue for these services was around £400k in 2012/13.

1232 The unit costs are for external ISDN2 services (i.e. BT’s sales to other CPs), but are extremely similar to internal ISDN2 figures (i.e. Openreach’s sales to other BT business units). The revenues are for both external and internal ISDN2 sales. Costs and charges are on a per channel basis, and would be double what is shown here if they were on a per line basis.

1233 In BT’s price list the prices are expressed on a per line per quarter basis, so rather than the price appearing as £105.96 per channel per annum it appears as £52.98 per line per quarter.
understand that the revenue from these services is extremely small, and consider that it would be disproportionate to charge control these services. However, we note that BT is subject to a fair and reasonable charges obligation in relation to these services to the extent that they are reasonably necessary for the provision of ISDN2.

**Separate ISDN2 transfer charge control**

**Decision to impose separate ISDN2 transfer charge control**

17.132 We considered whether there would be any concerns if we imposed a single basket charge control consisting of wholesale ISDN2 rentals, connections and transfers. A possible concern is that BT would have an incentive to reduce the rental and/or connection charges while increasing the transfer charges. We are particularly concerned about the level of the transfer price because of its importance to switching and competition at the retail level. Lower switching costs are generally likely to be in consumers’ interests, since they help strengthen retail competition. We have therefore decided to impose a separate charge control for the ISDN2 transfer charge.

**Specifying the ISDN2 transfer charge on a per line basis**

17.133 We note Verizon's preference for us to reference the ISDN2 transfer charge in the same way as BT, which it said was on a per line basis rather than per channel basis. We note that BT’s RFS present costs in relation to ISDN2 transfers on a per channel basis, but that BT’s price list is on a per line basis. It does not make any substantive difference whether the charge control is specified on a per line basis or a per channel basis given that an ISDN2 line always consists of two channels. The per line basis would be double the per channel basis. Given it makes no substantive difference, we have specified the ISDN2 transfer charge control on a per line basis, in line with Verizon’s suggestion.

**Level of the ISDN2 transfer charge control**

17.134 We consider that it would be desirable for the transfer charge to be in line with LRIC, which would reduce switching costs and promote competition for the benefit of end-users. In the July 2013 FAMR Consultation, we proposed setting the ISDN2 transfer charge based on recent estimates in BT’s RFS, and proposed to set it at £10 per channel (i.e. £20 per line), which gave particular weight to the most recent data available at that time, which was the DLRIC figure of £9.27 per channel in the 2011/12 RFS. In BT's 2010/11 RFS, the cost was £8.04 per channel, in 2009/10 it was £16.26, and in 2008/9 it was £5.16. In the 2012/13 RFS, the reported cost for ISDN2 transfer was £17.62 per channel. Based on the allocation methods used in BT's 2011/12 RFS, the ISDN2 transfer costs would be £13.68 per channel. See Section 6.2 of BT, Report requested by Ofcom describing certain changes to the Accounting Documents for the year ended 31 March 2013 and illustrating the resulting differences to the Current Cost Financial Statements had those changes not applied, 3 October 2013, [http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2013/ReportrequestedbyOfcomfortheyearended31March2013.pdf](http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2013/ReportrequestedbyOfcomfortheyearended31March2013.pdf).

17.135 However, BT has since informed us that what was reported as ‘ISDN2 transfer’ in its RFS is actually made up of three types of services (rather than just relating to the...
ISDN2 transfer service). Moreover, the charges for the other services included are much higher than the ISDN2 transfer charge, and the volumes of the other services are not negligible. This suggests that the actual cost of just the ISDN2 transfer service is likely to be materially lower than the reported cost for ‘ISDN transfer’ in BT’s 2011/12 RFS. BT has confirmed that it is unable to identify the costs of ISDN2 transfer alone. There is therefore no robust actual cost data concerning the ISDN2 transfer service on its own.

17.136 In light of the above, we consider that it would be inappropriate to continue to rely upon BT’s RFS data in order to estimate the LRIC for ISDN2 transfer services. Our intention in the July 2013 FAMR Consultation (as set out in paragraph 15.118 thereof) was for the ISDN2 transfer charge to be in line with LRIC. Any decision by Ofcom to maintain the ISDN2 transfer charge at £10 per channel (or £20 per line) would be contrary to the policy on which we consulted in the July 2013 FAMR Consultation. We have, therefore, sought to estimate the LRIC data for ISDN2 transfer charges based on a suitable benchmark.

17.137 We consider the WLR (WFAEL) transfer service is similar in many respects to the ISDN2 transfer service and, therefore, would be an appropriate pricing benchmark to use. In particular, both involve an update to records on Openreach systems and no physical activity. In our assessment of the WLR transfer charge for the WLR charge control (see Volume 2) that we are currently imposing, we estimate the LRIC to be around £9 per line on average over the period 2014/15 to 2016/17. We consider that when comparing this to ISDN2 it is most appropriate to consider that this benchmark implies a charge of £9 per line for ISDN2, as opposed to considering it to imply £9 per channel. This is because the record changes required should only need to be made once for the line (i.e. both channels), rather than being made separately for each channel.

17.138 In the absence of any actual cost data concerning the ISDN2 transfer service on its own, we have therefore decided to set the ISDN2 transfer charge at £9 per line (or £4.50 per channel).

No glide path for ISDN2 transfer charge

17.139 We have considered whether the reduction in the ISDN2 transfer charge should be achieved through a one-off adjustment or the application of a glide path. We normally consider that a glidepath is more appropriate. This is partly because it has greater incentives for efficiency improvement as it allows the regulated company to retain the benefits of cost reductions made under a previous charge control for longer, and partly because it avoids large and unexpected changes to wholesale charges, which could undermine stability for market participants.

17.140 However, for the ISDN2 transfer we have decided to make a one-off adjustment to £9 per line (i.e. £4.50 per channel). We consider that avoiding large and unexpected changes is less relevant for ISDN2 transfers, given that the adjustment we are making will result in charges similar to what was in place until recently. In particular, by reducing the ISDN2 transfer charge to £9 per line (or £4.50 per channel), we are reversing an increase made by BT in October 2012 from £11.30 to £30 per line (or £5.65 to £15 per channel). We also consider that it is more proportionate to have a

1235 The other types of service relate to WLR-ISDN2 Conversion (same CP) and PSTN-ISDN2 Conversion (change of CP).
simple one-off adjustment given the very small scale of the transfer revenue\textsuperscript{1236} and that such a reduction will immediately reduce switching costs thereby promoting downstream competition. We do not agree with Virgin’s submission that our arguments for a one-off adjustment are not an appropriate basis for approaching price regulation.

*No adjustment to other charges for the lower ISDN2 transfer charge*

17.141 In the July 2013 FAMR Consultation, we proposed not to make any adjustment to increase the rental or connection charges to reflect any common cost recovery foregone as a result of the ISDN2 transfer charge being below FAC.

17.142 BT disagreed with this, and, as noted in paragraph 17.115 above, considered there should be an adjustment to allow it to recover the difference between the LRIC and FAC for ISDN2 transfers from other charges. We have considered this further and have decided that it would not be appropriate to increase other ISDN2 charges (e.g. the rental or connection charges) to compensate for the ISDN2 transfer charge being below FAC. In particular, as discussed in paragraph 17.121 above, we consider that returns on ISDN2 services overall are currently in excess of the likely cost of capital. We also consider no adjustment is necessary because the ISDN2 transfer revenues are, in any case, small (probably less than £0.5 million), meaning that this issue is not material within the context of a review of ISDN2 services which have total revenues of over £100 million.

*Notice period for reduction in ISDN2 transfer charge*

17.143 As noted in paragraph 17.115 above, BT submitted that the legal instrument should contain a description of the notification or implementation timing for the ISDN2 transfer price change. It noted that the GEA Migration Charge control had a 28 day implementation period, and considered that Ofcom should include equivalent wording for the ISDN2 transfer charge.

17.144 However, given our prior notification of this Statement to the EC, we consider that BT will have sufficient notice of the required price reduction to be able to effectively implement it on 1 July 2014. Further, we are of the view that BT has not submitted any compelling reason as to why such a 28-day implementation period is necessary. We note that the GEA migration charge is only one part of our changes in this area that also include changes to the minimum contract period which may require longer to implement (see Section 12). We have therefore decided to maintain our position as set out in the July 2013 FAMR Consultation, and the requirement to reduce the ISDN2 transfer to £9 per line (or £4.50 per channel) shall therefore have effect from 1 July 2014.

**Conclusion**

17.145 For the wholesale ISDN2 charge control, we have decided to impose:

\textsuperscript{1236} The revenues for ISDN2 transfers were probably less than £0.5 million in 2012/13 when only considering the ISDN2 transfer service on its own, rather than the broader set of services reported under ‘ISDN2 transfer’ in BT’s RFS.
• a basket of ISDN2 rentals and connections, with a cap on average charges based on their current levels. We propose to set this in nominal terms for 1 July 2014 to 31 March 2017, which means average charges will fall in real terms (i.e. after taking into account general inflation); and

• a separate control on ISDN2 transfers set at £9 per line (or £4.50 per channel).

17.146 The legal condition is set out in full in Annex 29.

Legal tests

17.147 For the reasons set out in Section 19, we are satisfied that the charge control condition for BT on wholesale ISDN2 services meets the tests set out in the CA03.

Cost accounting on BT for the wholesale ISDN2 market

Policy proposals as set out in the July 2013 FAMR Consultation

17.148 Given that we did not propose imposing a Basis of charges obligation in the July 2013 FAMR Consultation, we proposed that we would not require BT to report DLRIC and DSAC for wholesale ISDN2. However, we proposed that BT should continue to be required to maintain DLRIC and DSAC data.

17.149 We said that it would not be appropriate to require cost reporting in the RFS for ISDN2 services on a FAC basis, but proposed that BT should maintain this data.

17.150 We asked the following consultation question.

15.3 Do you agree with our proposed approach for cost accounting for ISDN2? Please provide reasons in support of your views.

Stakeholder responses to the July 2013 FAMR Consultation

17.151 Vodafone agreed with our proposed approach for cost accounting for ISDN2.1237

17.152 Verizon, on the other hand, stated that there should be no reduction in the information provided by BT.1238

17.153 BT and Virgin made the same comments for ISDN2 as for ISDN30 above (see from paragraph 17.78).

Analysis including Ofcom response to stakeholder responses

17.154 We have published the 2014 Regulatory Financial Reporting Statement\footnote{Ofcom, Regulatory Financial Reporting: Final Statement, 20 May 2014, \url{http://stakeholders.ofcom.org.uk/consultations/regulatory-financial-reporting/statement/}}, setting out our revised cost accounting condition. We will subsequently be issuing cost accounting Directions pursuant to the Regulatory Financial Reporting Statement setting out the form of reporting for the RFS. We describe here our policy as to what we expect to include in the cost accounting Direction. In considering this issue for ISDN2, we have first considered whether it is appropriate to include in the cost accounting Direction a specific requirement for BT to publish cost data, before then considering whether the inclusion of a specific obligation for BT to maintain cost data in the Direction is appropriate.\footnote{Note, we set out our cost accounting policy for TRCs in Section 18.}

17.155 In line with our consultation proposals, we remain of the view that we should not impose an obligation on BT to publish FAC, DLRIC or DSAC data for ISDN2. This is because, as set out in the consultation, wholesale ISDN2 cost data (as with ISDN30) is potentially distorted as a result of heavily depreciated assets, which means that cost information such as FAC (or indeed DLRIC and DSAC) does not reflect the true costs of providing the service. As such, we continue to consider that it could be a source of potentially misleading information for stakeholders if this data were published. Therefore contrary to Virgin’s view, it is not clear that such data would indeed be useful for stakeholders (or for us), a point also made by BT in its consultation response. We also note that not requiring the publication of DLRIC and DSAC data is consistent with our approach and reasoning in other recent decisions where we have removed Basis of charges obligations (and with our decisions in the remainder of this Statement).\footnote{Specifically, given we are not imposing a Basis of charges obligation, we do not consider it necessary for CPs to have access to DLRIC and DSAC in order to monitor compliance. Ofcom, Business connectivity market review - final statement, 28 March 2013, \url{http://stakeholders.ofcom.org.uk/consultations/business-connectivity-mr/final-statement/} and Ofcom, Review of the fixed narrowband services markets, September 2013, \url{http://stakeholders.ofcom.org.uk/consultations/nmr-13/statement/}.}

17.156 Although we consulted on requiring BT to maintain FAC, DLRIC and DSAC data, on further reflection, and in light of consultation responses, we consider that specific cost accounting requirements for the maintenance of such data for ISDN2 would not be appropriate. In particular, given the approach to setting the ISDN2 charge controls (set out above) and the potential distortions within the ISDN2 cost data we have set out, we consider that FAC, DLRIC and DSAC data would provide limited insight into the effectiveness of our remedies during this review period. It would also be of limited benefit for transparency of cost purposes. We consider that this weakens the case for imposing cost accounting obligations for the maintenance of such data, irrespective of whether such cost data is onerous or otherwise to provide (as argued by Virgin), as the obligation must be objectively justifiable and proportionate, which for these reasons we do not consider to be the case. We also note in this regard that we are not imposing specific cost accounting requirements for ISDN30, which also suffers from similar data issues.

17.157 Therefore we consider that it would not be appropriate to impose specific cost accounting requirements in the cost accounting Direction for ISDN2 for this market review period.
Section 18

Remedies: Time Related Charges and Special Fault Investigations – approach to pricing

Summary

18.1 We consider that pricing regulation is necessary to prevent BT from exploiting its SMP by charging excessively for time related charges (TRCs) and special fault investigations (SFIs) where they are within scope of the network access requirement imposed in relation to LLU and WLR services.

18.2 For TRCs, we have adopted a three stage approach to determine the final charge controls:

- **Step 1**: bring TRC charges more into line with 2014/15 cost estimates. This results in a 12.3% reduction to all TRC charges;

- **Step 2**: as a result of BT’s hourly billing practice (i.e. BT bills for multiples of an hour, irrespective of how long jobs actually take) we consider that an additional reduction to hourly charges is required, in order to ensure that revenues do not exceed costs. This results in an additional 18% reduction to all (post Step 1) hourly TRC charges; and

- **Step 3**: final TRC price changes, which results in a combined total reduction of 28% to current hourly TRC charges, and a 12.3% reduction to the visit charge.

18.3 These final charges will come into effect on 1 July 2014, and will subsequently be indexed by +0.2% per year.

18.4 For SFIs, we consider that the charges should be aligned with the underlying TRC cost estimates from Step 1 above (i.e. before the adjustment for the billing approach). Specifically, as at 1 July 2014, SFI prices will be made up of the following components:

- SFI visit component charge – only incurred where a visit charge is included in the module, and will be equal to the 2014/15 visit charge element in a TRC; and/or

- SFI hourly component charge – which will be equal to the hourly TRC cost estimate in 2014/15 multiplied by the average module duration.

18.5 Both of these charge components will subsequently be indexed by +0.2% per year.

Introduction

18.6 We have concluded that BT has SMP in the markets for WFAEL, wholesale ISDN30, wholesale ISDN2, and WLA in Sections 3, 4, 5 and 7 respectively. This section sets out our decision to set a charge control for TRCs supplied pursuant to the network access obligation in each of these markets and SFI services supplied pursuant to the
network access obligation in the WLA market. We also describe our policy as to what we expect to include in the cost accounting Direction made under our cost accounting conditions that we have imposed in Section 10.

18.7 TRCs are engineering services that are provided across BT’s portfolio of products, which involve work not covered by BT service level agreements. They are generally charged on a per visit and/or per hour basis for an engineer, with charges varying depending on when the work takes place (e.g. within normal business hours or outside normal business hours).

18.8 SFI services are requested by CPs for further investigation of broadband faults on MPF and SMPF lines where no fault has been found using the standard Openreach line test. These services are sold in individual modules for both MPF and SMPF lines, with CPs buying a compulsory Base module covering the fault investigation and further modules covering repairs (CPs often request more than one module to locate and fix a fault). Current charges for SFIs are on a per module basis, and vary depending on the module (from £15 up to £134.25).

18.9 The rest of the section is broadly structured as follows:

- January 2014 FAMR Consultation and responses;
- overview of BT’s current prices for TRC and SFI services; and
- our analysis (including our response to stakeholder responses to the 2014 January FAMR Consultation) and final policy conclusions.

Background

18.10 As part of the July 2013 FAMR Consultation, we considered our approach to the pricing of certain LLU and WLR ancillary services which fall outside the scope of the proposed charge controls for those products, including TRCs and SFIs.1244

18.11 We set out our proposals in the July 2013 FAMR Consultation to impose a Basis of charges obligation on TRCs and SFIs. However, in light of the responses to that consultation and further evidence gathered, we reconsidered our position and proposed a charge control on these services in the January 2014 FAMR Consultation.

1243 The modules being: Base, Network, Frame, Internal wiring, Internal equipment, Co-op, and Frame Direct. The choice of further SFI modules depends on the outcome of work undertaken as part of the Base module.
January 2014 FAMR Consultation proposals

18.12 We proposed a charge control for those TRCs and SFIs supplied pursuant to the network access obligation in each of the FAMR wholesale markets and SFIs supplied pursuant to the network access obligation in the WLA market (by virtue of them being ancillary services that are reasonably necessary for the use of LLU, WLR, ISDN30 wholesale line rental and ISDN2 wholesale line rental). In particular we proposed:

- a one-off reduction to each and every TRC charge in the range of 12-40% (with a base case reduction of 16%), with charges subsequently indexed to +0.2% per year; and

- that the SFI module prices should be aligned with the relevant TRC cost estimates, with the resulting charge components subsequently indexed to +0.2% per year, and to extend the requirement for fair and reasonable charges on SFIs.

18.13 We also described our policy as to what we expect to include in the associated cost accounting Direction, proposing that BT must provide to us certain direct and indirect volume, revenue and cost information and that it publishes a sub-set of this information.

Stakeholder responses to the January 2014 FAMR Consultation

Openreach

18.14 Openreach strongly disagreed with our proposals and set out alternatives. It argued that:

- the majority of TRCs and SFIs were not ‘reasonably necessary’ for the provision of WLR and LLU. In particular, 53% of TRCs and all SFIs were carried out using Openreach engineers for jobs where there was no fault on the Openreach line. While acknowledging that practical and economic constraints existed which undermined CPs’ ability to use alternative suppliers for these services, Openreach argued some services were still ordered unnecessarily due to inadequate CP diagnostic processes. These processes could be improved, but our proposed regulatory price reductions could provide disincentives for CPs to do so:


1246 We understand this figure comprises the following categories from Table 1 of Openreach’s response to the January 2014 FAMR Consultation: [%], http://stakeholders.ofcom.org.uk/binaries/consultations/famr-2014/responses/Openreach.pdf. BT response to question 9 of the s.135 notice of 23 April 2014.

1247 We note that Openreach also stated in its response to the December 2013 LLU WLR Consultation that one driver of the increasing trend in fault rates on broadband lines is that more network components can be involved in the delivery of broadband services, leading to more points of failure. It stated that “whilst these components are often CP owned (either at the exchange end or in the premise), inability to isolate root causes can drive additional fault volumes to Openreach” (paragraphs 30 and 274, Openreach response to December 2013 LLU WLR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-llu-wlr-charge-controls/responses/Openreach.pdf).
• at least a quarter of TRCs (off-network volume deals and certain off-network repair and provision jobs) and SFIs (end-user wiring/equipment modules) were wholly contestable. Off-network volume TRCs could be supplied by third parties under competitive tender, and CPs’ pre-authorisation of certain off-network repair and provision TRCs and end-user wiring/equipment SFI service categories demonstrated that CPs could choose who supplied such services. Consequently, Openreach said these service categories should not be regulated;

• to provide investment certainty, we should clarify that future value-add developments to the existing TRC and SFI products, as well as any new services introduced to complement them, should not be regulated;

• our proposals were disproportionate and our proposed regulatory pricing approach would remove all margin above FAC which could result in disincentives for Openreach to supply or innovate these services (where the activities are contestable);

• should Ofcom impose a charge control, it should instead either introduce:
  o Option 1: a blended TRC rate applying to all TRCs (even those that BT regards as contestable). This should be based on FAC but include an addition to the aggregated margin of \([\%]\) in recognition of the \([\%]\) of TRCs that, in Openreach’s view, are wholly contestable. SFI module prices to be aligned with this blended rate and future increases for both TRCs and SFIs to be subject to a charge control; or
  o Option 2: our existing proposals for FAC without a margin with future increases subject to a charge control, but explicitly exclude TRC and SFI services carried out beyond the NTE and the development of future value-add services;

• there was little scope for reducing labour costs, as argued by TalkTalk. Given the standard TRC visit charge was based on a weighted average and SFI modules were based on engineering activity times, it considered that there was minimal scope to make efficiency gains through reduced job duration. Further, in response to TalkTalk’s suggested efficiencies, it argued that changing “labour skillsets” could negatively affect quality of service, while suggestions that technology could be substituted for labour were too vague (and would be better dealt with via the SoR process). Openreach argued that the main scope for efficiency gains would

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1248 Such TRCs occurred where Openreach “proves the issue is on customer owned wiring and carries out a fix” (\([\%]\)) and where Openreach “provides customer wiring and extension jobs beyond the NTE on MPF and WLR” (\([\%]\)). In addition, Openreach said that volume work carried out off-net (accounting for \([\%]\) of TRC revenue) was contestable. These figures are set out in Table 1 of its response to the January 2014 FAMR Consultation. For SFIs, Openreach said that, based on a study of orders on a single day, just under \([\%]\) of revenue was off-net (off-net base, end-user wiring and equipment) and so could be carried out by someone else. However, it noted that only end-user wiring and equipment were clearly contestable given that off-net base work was wrapped up with on-net work as part of the Base module.

1249 For SFIs, Openreach gave the following examples of such innovations: \([\%]\). BT added that CPs seeking other changes and innovations (including billings in less than 1 hour units) should use the SoR process.

1250 Openreach suggested a reconfiguration of the SFI Base module in order to separate out activities which are clearly not Openreach related and which could be done by third party engineers into a new on-premises engineering module.
come from avoiding unnecessary call outs through better CP remote diagnostics and customer support;

- there was an error in our charge control calculation, particularly that the common cost uplift applied to the hourly labour cost should be 67% (rather than the proposed 48%) to reflect 2012/13 costs using 2011/12 methodologies; and

- while agreeing revenue reporting for compliance purposes may be required, detailed cost reporting was neither required nor proportionate. If Ofcom insisted upon this level of reporting, Openreach requested further z regarding the information required from management accounts and the RFS.

**Sky**

18.15 Sky welcomed our analysis on the basis of regulation, saying that TRCs and SFIs were not subject to a sufficient competitive constraint. It also agreed with our proposal to impose charge controls instead of a Basis of charges obligation or safeguard cap remedy. Sky agreed with the proposed alignment of TRC and SFI charges, and a one-off starting charge adjustment. However, it had some concerns around the charge control design and level. More specifically, Sky argued:

- we should act to improve the quality and contestability of BT’s service;

- we should regulate improvements to BT’s line testing by introducing an SLA relating to the accuracy of Openreach’s line tests, with corresponding SLG payments to CPs where this is not met;

- we should require Openreach to publish data on the accuracy of its system line testing;

- we should require BT to promptly deal with and implement (if necessary) TalkTalk’s SoR request for access to BT’s NTE5 (as well as improving the SoR process more generally);

- we should structure Openreach’s SFI modules so that CPs could avoid the need to pre-authorise all modules;

- Openreach should improve transparency with respect to how it decides to charge for SFI modules;

- LRIC (rather than FAC) was the appropriate charge control cost standard for both SFIs and TRCs. This was because the service costs could impact switching and were therefore similar to other charge controls on LLU/WLR migration services which were based on LRIC;

- the level of TRC/SFI charges should be lower than proposed and the midpoint of our proposed range (i.e. a 26% reduction) would be more equitable given the underlying data issues affecting the top and bottom of the range;

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http://stakeholders.ofcom.org.uk/binaries/consultations/famr-2014/responses/Sky_FAMR_Charge_Controls.PDF.
our indexation methodology was incorrect as a pay inflation assumption of 2.8% was too high and the proposed efficiency rate of 5% was too modest; nonetheless, Sky agreed we should apply indexation to each and every TRC/SFI charge; and

• Ofcom should guard against Openreach overstating the amount of time it took to complete an SFI module.

**TalkTalk**

18.16 TalkTalk agreed that TRCs and SFIs were not subject to a sufficient competitive constraint. It also agreed with our charge control proposals (including aligning TRCs and SFIs, a FAC standard, and a one-off starting charge adjustment). However, TalkTalk was particularly concerned with the level of our proposed charge reduction and the approach to indexation.

18.17 TalkTalk argued that we should reduce prices further than proposed for TRCs (beyond \(5\%\)). Its reasoning was based on:

• **alternative cost estimates:** TalkTalk argued that we should use other suppliers’ prices (e.g. Qube) as benchmarks for setting the charge control. It also argued that the RFS data was a better cost base to use than the management accounts data; and

• **BT’s hourly billing approach:** TalkTalk argued that a larger price reduction would reflect the actual revenue that BT receives per hour as the full hourly charge is levied for part hours worked (due to rounding up to the next full hour by BT).

18.18 TalkTalk considered that, while consistency with the approach to TRCs was sensible, Ofcom’s approach for SFIs provided BT with a clear opportunity to game the system by exaggerating the time taken for each SFI, it would eradicate BT’s incentive to become more efficient by reducing task times, and BT could effectively increase its prices and profits by using less qualified or less experienced staff who cost less but took longer. It considered that a fair and reasonable charges obligation was not an effective constraint on BT’s behaviour. Ofcom should instead reduce total SFI charges in line with the TRC percentage reduction.

18.19 TalkTalk argued that the potential for labour efficiency gains should be reflected in our indexation rate, as in general there would be scope to make labour efficiencies (for example, through substitution of technology for labour, changing “labour

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\(^{1253}\) TalkTalk argued that this is because CPs lacked the data to be able to challenge BT’s claims regarding the time required for different modules, and the dispute resolution approach would absorb a large amount of Ofcom’s and stakeholders’ time (taking months to resolve) during which BT would be able to overcharge CPs. TalkTalk also argued that an SLG dispute gave BT wide discretion regarding the method and assumptions used to set an SLG, and so if the same framework was used to resolve a dispute regarding the time period it is likely that this would give BT flexibility to inflate the required time (Dispute between TalkTalk Telecom Group PLC and Openreach relating to whether Openreach offered MPF New Provide to TalkTalk on fair and reasonable terms and conditions, 15 August 2013).
skillsets*, or reducing task times). As such, TalkTalk considered our approach should reflect pay inflation, non-pay inflation, and efficiency gains across all costs (as per the LLU WLR (WFAEL) charge control). However, it argued that where a product was charged on a ‘per hour’ basis then the full efficiency gain should not apply since costs will not reduce as the task time decreased. TalkTalk proposed an indexation of -2% per year for products priced per task and +0% per year for products priced per hour on this basis.

18.20 Finally, TalkTalk argued that \[ \text{[\text{\textendash}]\text{\textendash}]} \] and that Openreach should publish better data for the next charge control.

Verizon

18.21 Verizon agreed with Ofcom’s analysis of the basis for regulation. \[1254 \text{[\text{\textendash}]} \] \[1255 \]

18.22 With respect to our cost accounting proposals, Verizon \[\text{[\text{\textendash}]}\]. \[1256 \]

EE\[1257\]

18.23 EE agreed with the charge control proposals given the absence of effective competitive constraints on Openreach meant current pricing for TRCs and SFIs was excessive. It also welcomed the proposed one-off charge reductions. EE further noted that it \[\text{[\text{\textendash}]}\].

Vodafone\[1258\]

18.24 Vodafone agreed we should impose a charge control, and that all measures should be introduced to ensure prices reflected efficiently incurred costs.

Current prices

18.25 Tables 18.1, 18.2, 18.3 and 18.4 set out the current and most recent previous prices for TRCs and SFIs. \[1259\]


\[1259\] Prices correct as of 25 March 2014, see www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=hcaYilWegP2u2KS8FTdcOBScuIM1Opem5f8dVePnh8UIMnGHsqdC0vzo163bJmh34D91D7M0q8u%2F0AlSgtIFAKw%3D%3D.
Table 18.1: TRC prices – Visits/Hourly charges

<table>
<thead>
<tr>
<th>TRC product</th>
<th>Normal working day (£)</th>
<th>All other times except Sundays and Public / Bank Holidays (£)</th>
<th>Sundays and Public / Bank Holidays (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Previous 1260</td>
<td>Current 1261</td>
<td>Previous 1262</td>
</tr>
<tr>
<td>TRC1</td>
<td>Standard Chargeable Visit (Visit plus up to 1 hours work)</td>
<td>115</td>
<td>120</td>
</tr>
<tr>
<td>TRC2</td>
<td>Additional Hours (or Part thereof)</td>
<td>57</td>
<td>60</td>
</tr>
<tr>
<td>TRC3</td>
<td>Supplementary charges (Per Visit)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>TRC4</td>
<td>Supplementary charges (Per Hour or Part thereof)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Table 18.2: TRC prices – store items

<table>
<thead>
<tr>
<th>TRC product</th>
<th>Per item (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Previous 1262</td>
</tr>
<tr>
<td>TRC5</td>
<td>Internal Pack (For internal work at a normal premises)</td>
</tr>
<tr>
<td>TRC6</td>
<td>External Pack (For external work at a normal premises)</td>
</tr>
<tr>
<td>TRC7</td>
<td>Data ext kit (Associated with Broadband Health check)</td>
</tr>
<tr>
<td>TRC8</td>
<td>SSFP NTE2000 (Broadband front plate)</td>
</tr>
<tr>
<td>TRC9</td>
<td>Broadband micro filter</td>
</tr>
<tr>
<td>TRC10</td>
<td>Block Terminal 92A (For Redcare use)</td>
</tr>
</tbody>
</table>

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1260 Previous prices were set on 8 June 2012.
1261 Current prices were set on 1 April 2013.
1262 Previous prices were set on 8 June 2012.
1263 Current prices were set on 1 April 2013.
Table 18.3: TRC prices – shifts/plant rearrangement

<table>
<thead>
<tr>
<th>TRC product</th>
<th>Per order (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Previous 1264</td>
</tr>
<tr>
<td>TRC11 Internal and External Shifts</td>
<td>115</td>
</tr>
<tr>
<td>TRC12 Additional Line shifted</td>
<td>57</td>
</tr>
</tbody>
</table>

Table 18.4: SFI2 prices

<table>
<thead>
<tr>
<th>SFI2 product</th>
<th>Per item (£)</th>
<th>Previous 1266</th>
<th>Current 1267</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module 1 Base</td>
<td>130</td>
<td>134.25</td>
<td></td>
</tr>
<tr>
<td>Module 2 Network</td>
<td>75</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Module 3 Frame</td>
<td>75</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>Module 4 Internal wiring</td>
<td>50</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Module 5 Internal equipment</td>
<td>25</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Module 6 Co-op</td>
<td>15</td>
<td>0.00*</td>
<td></td>
</tr>
<tr>
<td>Module 7 Frame direct</td>
<td>115</td>
<td>120</td>
<td></td>
</tr>
</tbody>
</table>

* Note, the co-op module has now effectively been merged with the Base module.

18.26 The remainder of this section sets out our analysis (reflecting stakeholder submissions) and final policy conclusions. It is structured as follows:

- basis for regulation;
- nature of concern
- choice of remedy;
- charge control proposals; and
- cost accounting for TRCs and SFIs.

18.27 The legal tests for our decisions are set out in Section 19.

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1264 Previous prices were set on 8 June 2012.
1265 Current prices were set on 1 April 2013.
1266 Previous prices were set between 2010 and 2013 for different modules, see www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=totid5BwFmkf9vLcBfTRyZ9loRxWibJ96v7YWmjAIrMnGHSqC0vzO163bJmh34D91D7M0q8u%2F%0AIlSgFAKw%3D%3D
1267 Current prices were set for modules on 1 April 2013, apart from Frame, Internal wiring and Equipment prices which were set on 8 June 2012, and the Base module on 1 April 2014.
Analysis and final policy conclusions

Basis for regulation

18.28 In this review, we are maintaining an obligation on BT to provide network access in the form of LLU services, WLR, ISDN30 wholesale line rental and ISDN2 wholesale line rental. This includes a requirement on BT to provide such ancillary services as may be reasonably necessary for CPs to use these services. Such ancillary services are defined as "an associated facility or services associated with an electronic communications network and/or an electronic communications service which enable and/or support the provision of services via that network and/or service or have the potential to do so". The requirement imposed in the WLA market sets out in the SMP condition certain services that are ancillary to LLU for these purposes, although this list is not exhaustive.

18.29 Given that ancillary services that are reasonably necessary for the provision of services based on LLU and WLR (for WFAEL, ISDN30 and ISDN2) form part of the network access requirement imposed in the FAMR markets, we have considered the extent to which TRCs and SFIs supplied across these markets are capable of falling within this network access requirement.

18.30 As we noted in the January 2014 FAMR Consultation, it is clear that TRC services are provided in relation to LLU in the WLA market and all BT’s WLR products across the WFAEL, wholesale ISDN2 and wholesale ISDN30 markets. Where we refer to WLR below in this section, this includes ISDN2 wholesale line rental and ISDN30 wholesale line rental, unless otherwise indicated. SFIs are however only supplied to support LLU and therefore our conclusions in relation to SFIs apply in relation to LLU only.

General principles relevant to whether TRCs and SFIs fall within the network access requirement

18.31 Whether or not any particular TRC or SFI service supply falls within the network access requirement will depend on the specific circumstances of that supply and would have to be assessed on its merits. However, as a general principle we consider that an assessment of whether or not any particular TRCs and SFIs are reasonably necessary and therefore are within scope should not just be based on whether the fault is on or off the Openreach network. Instead, it should consider whether suppliers other than BT (via Openreach) can supply equivalent economic TRC or SFI services, in a way which exerts a significant competitive constraint on the TRC and SFI services supplied by Openreach. In order to assess whether as a matter of principle TRCs and SFI services are capable of falling within the network access requirement, we have gathered evidence to understand this, including information on the ordering and diagnostic steps and processes, which we set out below.

18.32 The steps and processes used by CPs are broadly similar across TRCs and SFIs. We have set out a more detailed summary in Annex 4, but have summarised the key features below:

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1268 See definitions of ‘LLU Ancillary Services’ and ‘WLR Ancillary Services’ in Annex 33.
1269 Power; Co-Location; Co-Mingling; Site Access; Internal Tie Circuits; External Tie Circuits.
• the first step involves a customer reporting a problem to their CP, following which the CP carries out remote diagnostics to understand the basic nature of the problem from a customer’s perspective, e.g. an intermittent dial tone on the voice service;

• the CP will then begin further remote diagnostics using a combination of their own and Openreach’s line test systems. The main function of these tests is to identify whether there is a fault or not. The tests may in most cases also give a broad indication of the location of the problem. However, they do not specify with any accuracy whether the problem is either on- or off-net (or both on- and off-net). In particular, TalkTalk’s own line test indicates whether the problem is ‘in home’ or ‘external to the home’ and, while it can provide more granular sub-descriptions of the potential issue, in most instances these do not specify clearly whether the fault is on or off Openreach’s network. Sky relies on Openreach’s line test system which indicates whether the problem is ‘near or close to the home’; and

• based on the information gathered above, the CP may conduct further in-home checks with the customer to understand whether their home connections are correctly set-up (e.g. whether the router is connected to the phone socket). This step is optional as customers may by-pass it if they do not want to go through the diagnostic checks. If customers consent, CPs may use Openreach’s best practice diagnostic guidelines or their own. The guidelines assist CPs in working out the nature of the problem (e.g. whether it is an intermittent dial-tone or whether there may be a fault on the wiring) but do not specify whether the problem occurs on or off Openreach’s network. If the CP is able to resolve the issue then the case is closed, and, if not, a CP may despatch an engineer, with the customer’s consent, to resolve the problem.

18.33 While it is the case that non-Openreach suppliers are able to provide certain TRC and SFI services, we are of the view that there are a number of barriers for CPs using third party engineers to provide such services.

18.34 Firstly, only Openreach engineers can be used to carry out work which occurs on the Openreach network. Such work occurs on the Openreach network from the exchange to the Openreach side of the NTE. We estimate that work on the Openreach network may account for approximately 35% of 2012/13 TRC revenue. We estimate that up to 90% of 2012/13 SFI revenue may occur on the Openreach network if we assume work carried out on the Base module is carried out on Openreach’s network. However, we recognise that this figure may be an overestimate of the amount of on-net SFI work since some Base module work may not be carried out on Openreach’s network. BT has provided information which suggests that SFI modules

1270 TalkTalk response to question 1 of the s.135 notice of 25 October 2013.
1272 BT responses to question 3 of the s.135 notice of 25 October 2013 and question 1 of the s.135 notice 13 December 2013. The 35% figure was calculated as follows: BT identified that around 13.5% of total TRC 2012/13 revenue was on-net. However this figure does not take into account so called ‘volume deals’. These account for approximately [X] of TRC revenue and approximately [Y] of this work is on-net, giving a further 22%. Adding this figure of 22% to the original 13.5% gives an overall figure of 35%.
1273 BT responses to question 3 of the s.135 notice of 25 October 2013 and question 1 of the s.135 notice 13 December 2013. The 90% figure is based on BT’s statement that “SFI generates £[X], £[Y] of which comes from base, network, frame, co-op modules which cannot be supplied by other operators as they involve work on BT side of NTE”.
which involve work on the Openreach network (excluding the Base module) accounted for approximately 60% of SFI modules ordered in 2012/13. Further, in its response to January 2014 FAMR Consultation, Openreach provided information setting out that work on its network, including on-network Base module orders, accounts for around 60% of SFIs ordered. On the balance of the above evidence, therefore, a majority of SFIs are likely to occur on Openreach’s network.

18.35 Secondly, if a CP is unable to determine in advance of despatching an engineer whether the location of the problem is on or off the Openreach network, we understand that a CP will normally use an Openreach engineer to carry out the work to ensure that the work is completed in a single visit. Only Openreach engineers are allowed to undertake work both on and off its network. If a CP were to use a third party engineer then it would risk repeat visits, by an Openreach engineer, if any of the work required was on the Openreach network. This is unattractive to CPs because it will result in them incurring additional cost by paying for an unnecessary visit by a third party engineer. Similarly, while cost may be one driver for this desire to avoid multiple visits, we understand from CPs that customer service and continuity of service are also important reasons for wanting to avoid repeat visits as much as possible. This desire to resolve issues ‘first time’ is also evident in relation to SFIs, where CPs pre-authorise all modules to avoid the risk of such repeat visits. We consider the need to avoid repeat visits an important consideration.

18.36 Finally, the evidence suggests that it is difficult for CPs to identify the location of a fault with sufficient accuracy as the remote diagnostic tests and processes do not categorically specify whether the fault is on or off Openreach’s network. While informative, the CP and Openreach line tests and Openreach guidance described above do not produce results which clearly specify that the fault is on or off the network. Similarly, while in-home checks with the customer can be useful, they may not always conclusively ascertain whether the work needed is on or off Openreach’s network. Moreover, we understand that there are line test errors which may undermine CPs’ confidence in their accuracy. BT suggests that the location accuracy of line tests varies between 4% (for SFIs) and 10% (for TRCs).

18.37 Therefore, we consider that in most cases CPs are unable to anticipate in advance when they can use a third party engineer to supply equivalent TRCs and SFI services. As explained above, even where the problem is ultimately found to occur off Openreach’s network, CPs face difficulties in identifying that this is the case before despatching an engineer.

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1274 BT responses to question 3 of the s.135 notice of 25 October 2013 and question 1 of the s.135 notice 13 December 2013. For SFIs, the 60% figure is based on BT information which suggests that, together, the demand for network, co-op, and frames modules (which cannot be supplied by other operators as they involve work on the Openreach side of the NTE) account for approximately 60% of SFI modules ordered, excluding base modules.
1275 Based on a sample of all the SFI jobs completed on 28 January 2014.
1276 TalkTalk indicated that it sends third party engineers to carry out work, but only where it is certain that they can repair the fault. Paragraph 2.1, TalkTalk response to the January 2014 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/famr-2014/responses/TalkTalk_TRCs_and_SFIs.pdf.
1278 By consenting to pre-authorisation, a CP has given Openreach permission to investigate and repair all necessary work on each order, irrespective of whether the work is on- or off-net.
1279 BT response to questions 4(c) and 4(d) of the s.135 notice of 25 October 2013.
18.38 The weakness of the competitive constraint exerted on the TRC and SFI services provided by Openreach is, in our view, also shown by the following:

- we set out below (see paragraph 18.90 onwards) that TRCs are currently above cost. This suggests that any competitive constraint on the price of these services is weak;

- internal papers supplied by BT would appear to support the view that TRC and SFI services are not subject to a sufficient competitive constraint. BT states in one paper that “demand for TRC repairs and provision is relatively price inelastic, as work can only be done by Openreach engineers”. While BT’s evidence suggests there may be some scope for customer switching for SFIs, it also states that “SFI generates £[£] of which comes from base, network, frames and co-op modules, which cannot be supplied by other operators as they require work on the BT side of the NTE”; and

- CP evidence shows that TalkTalk and Sky do not use any third party engineers for TRCs, and TalkTalk’s spend on third party engineers for SFIs is around 4% of its total SFI spend. The fact that TalkTalk has a contract with Qube but does not use third party engineers for TRCs or, in the majority of cases, for SFIs suggests that in the majority of cases TalkTalk does not consider that there are third party suppliers that can supply equivalent economic services in a way which exerts a significant competitive constraint.

18.39 We note Openreach's point that CPs do not always provide full pre-authorisation for certain types of work off the Openreach network. BT suggested that this means that all such work is contestable (and so should not be subject to regulation).

18.40 We recognise that not providing full pre-authorisation for all work off Openreach’s network suggests that CPs can use engineers other than Openreach to supply certain equivalent TRC/SFI services. However, the information provided by Openreach also suggests that CPs provide full pre-authorisation in many instances. For example, according to Openreach data from a random sample of orders for the week ending 22 November 2013, [£] fully pre-authorised [£] SFI work and [£] did so for [£] of work. This might suggest that [£] can sometimes predict with more certainty where the problem resides, but we note that the above [£] figure also includes work carried out off Openreach’s network (such as end-user equipment and wiring modules pre-authorised by [£]), meaning [£] is unlikely to be certain in every case. Therefore, we do not consider that CPs not providing full pre-authorisation is evidence that all such work is contestable; rather, it depends on the ability of a CP to determine in advance of despatching an engineer whether the problem is on or off the Openreach network and its consideration of the risk of repeat visits. We further discuss BTs point concerning the scope of regulation below.

18.41 Sky and BT felt that barriers could be lowered to increase contestability and that TRC and SFI service quality could be further improved. Openreach and Sky asked Ofcom to encourage or require enhancements to industry diagnostic processes and to aspects of TRC and SFI service quality and SFI module structure. Further to this,

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1280 BT response to question 2 of the s.135 notice of 13 December 2013.
1281 It is worth noting that, for the type of SFI for which TalkTalk does use third party engineers (internal wiring), it also sometimes uses Openreach engineers instead, even though Openreach prices are higher.
Openreach noted that our proposed reduction in TRC/SFI charges could reduce commercial incentives for CPs to address diagnostic process issues.

18.42 We support measures to improve service contestability and quality to the benefit of consumers. For example, we agree that measures by BT and other CPs to further improve their line testing and diagnostic capabilities, and by BT to improve transparency in line test accuracy/charging issues, could be helpful. However, the benefits of such measures would need to be weighed up against any potential technical feasibility complexities and/or issues of commercial feasibility. Accordingly, we consider that the most effective way to progress the issues raised by respondents would be for industry to pursue these through the appropriate industry fora in the first instance (for example, industry groups such as the Copper Products Commercial Group and/or Test and Diagnostic Forum could consider the line test information which would be most helpful for BT to provide).

18.43 We do not consider that any imposed price reductions are likely to reduce incentives for CPs to address diagnostic issues. This is because our charge controls reflect our estimate of the costs of provision of these services (including a contribution to common costs), as set out below. As a result, we consider that these prices will provide more efficient signals for other CPs in their own decisions on buying TRCs and SFIs, as well as investing in their own processes. We discuss Sky’s specific point about access to NTE5 in Section 12.

Conclusion

18.44 As set out above, whether or not any particular TRC or SFI service supply falls within the network access requirement will depend on the specific circumstances of that supply.

18.45 We consider that, as a matter of principle, TRCs and SFIs are capable of falling within the network access requirement. We note that Openreach accepts that a large proportion of TRCs and SFIs involve work on the Openreach network. We also take account that in the majority of cases it is difficult for CPs to identify whether the fault is on or off Openreach’s network with sufficient accuracy. Therefore, we consider that in most cases CPs are unable to anticipate in advance when they can use a third party engineer to supply equivalent TRCs and SFI services. In its response to the January 2014 FAMR Consultation, Openreach to some extent recognised the existence of practical and economic constraints that limit the use of alternative suppliers. These are relevant to the assessment of whether TRCs and SFIs are reasonably necessary. If CPs are unable to use alternative suppliers to supply equivalent economic TRC or SFI services, then such services are unlikely to exert a significant competitive constraint on the TRC and SFI services supplied by Openreach.

18.46 Based on this reasoning, and though each case would be considered on its merits, we would expect a large majority of TRC and SFI services to be reasonably necessary in order for CPs to provide downstream services based on LLU and WLR and, therefore, any such services would fall within the network access requirement we are imposing on BT.

18.47 Openreach argued that certain categories of TRC and/or SFI service should be outside of the scope of the network access requirement, including future value-add developments to the existing TRC and SFI products and any new services introduced
to complement them, along with work off the Openreach network (including volume deals and certain repair and provision work).

18.48 Again, any assessment of any such services would need to be considered in the specific circumstances of supply. However, we make the following observations.

18.49 Volume deals are a specific category of TRC service accounting for approximately one-third of TRCs.\textsuperscript{1282} We understand that these are bought in a different way to other TRC services because they are generally provided following a tendering process. To the extent that Openreach is constrained by other suppliers offering equivalent economic services, these volume deals may fall outside the scope of the network access requirement.\textsuperscript{1283} However, while we have not investigated competitively tendered services in detail, we understand that these services are currently priced at the same level as other TRC services and our analysis below indicates that this is currently above cost. We also understand that around [\%] of all TRC volume deals take place on Openreach’s network.\textsuperscript{1284} This suggests that in many cases there are not equivalent economic TRC services sufficient to exert a significant competitive constraint on the price of Openreach’s TRC volume deals.

18.50 In relation to future value-add and complementary service developments, whether or not these fall within the scope of the network access requirement would depend on the nature of the development. While we have not considered in any detail the specific examples given by Openreach, we note that it is not obvious that the [\%] would be reasonably necessary for the provision of services based on LLU and WLR and therefore may be outside the scope of the network access requirement. However, [\%] could be regarded as improvements to existing services and within the scope of the network access requirement (insofar as the existing service was also within scope). Again, it would be necessary to consider any particular service in the circumstances of its supply.

18.51 Finally, in relation to BT’s argument that all work beyond the NTE should be outside the scope of the network access requirement, as set out above we do not believe that this can be the only factor to determine whether TRCs or SFIs are outside scope. In our view, the appropriate consideration is whether CPs are able to use suppliers other than BT (via Openreach) to supply equivalent economic TRC and SFI services such that they exert a significant competitive constraint on services supplied by Openreach.

18.52 To the extent that TRC and SFI services are not reasonably necessary, these will fall outside of the network access requirement we are imposing. While such TRC and SFI services will not be regulated, BT may in practice choose to set the same TRC or SFI price for excluded cases as for those regulated TRC and SFI services. Alternatively, BT may price such services differently to those regulated by the charge controls. However, where it does so, BT will need to be able to demonstrate that these TRCs and SFIs are not reasonably necessary and that there are suppliers other than Openreach that are able to supply equivalent economic TRC/SFI services in a way which exerts a significant competitive constraint on the service supplied by Openreach.

\textsuperscript{1282} These include, for example, the provision of internal wiring on campus sites or multi-tenant buildings.

\textsuperscript{1283} We understand that BT is of the view that demand is more elastic and that it faces some competition on these services.

\textsuperscript{1284} BT response to question 1 of the s.135 notice of 13 December 2013.
Nature of concern

18.53 In a competitive market the pricing of services on the basis of the commercial judgements of individual companies could be expected to deliver cost reflective pricing. However, where competition cannot be expected to provide effective constraints, there is a risk of excessive pricing derived from the dominant provider’s ability and incentive to price at an excessive level inhibiting downstream competition and/or leading to excessive prices for end-users.

18.54 In this case, based on the evidence set out above, we consider pricing regulation is necessary to prevent BT from exploiting its SMP by charging excessively for TRCs and SFIs which are within scope of the network access requirement imposed in relation to LLU and WLR services. Indeed, as discussed below, there is evidence that BT’s current prices exceed its costs. The identification of such a risk is a necessary precondition under section 88 of the CA03 to enable us to impose a price control.

18.55 We therefore consider that some form of ex ante pricing regulation is appropriate to prevent excessive pricing and allow development of effective competition in downstream markets. We assess below what form of pricing remedy is appropriate.

Choice of remedy

18.56 In considering the appropriate remedy, there are a range of factors we need to consider. As set out above, we consider there to be a risk of excessive pricing in relation to TRCs and SFIs which are within scope of the network access requirement imposed in relation to LLU and WLR services. Therefore a key objective for any remedy is to limit BT’s ability to price excessively. This would have the effect of furthering allocative efficiency, which is achieved when prices are aligned with underlying resource costs. This ensures that all consumers who value a product at more than its cost are able to buy it.

18.57 However, we consider that balancing productive and dynamic efficiency incentives is also relevant, as was further emphasised in consultation responses (see summary above). Productive efficiency means that the costs of production are minimised, and in the case of TRCs we consider there to be two aspects to this incentive – ensuring the hourly costs are efficient (while still maintaining an appropriate service level), and ensuring that the engineer completes the task promptly (i.e. that the number of hours taken is efficient). Similarly, for SFIs, both ensuring that the module cost is efficient and ensuring the engineer has the incentive to complete the task promptly are relevant.

18.58 Dynamic efficiency refers to the improvements in efficiency that occur over time, as innovation and investment result in the development of new services, improvements in quality/reliability, and lower costs. We consider there are two distinctions relevant for TRCs and SFIs – improvements to the services themselves, and the introduction of complementary/value-added services (which as discussed in paragraph 18.50 may potentially be outside the scope of the network access requirement). BT has argued that investment incentives are particularly important for TRCs and SFIs, and has raised the role of an appropriate rate of return in these incentives (discussed further.

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1285 For shorthand we refer to these as TRC and SFI services in the remainder of this section.
1286 I.e. that productive efficiency is not achieved by simply cutting service availability and levels.
below). For those TRCs and SFIs that are within scope of the network access requirement, investment incentives will need to be traded off against protecting customers from excessively high prices (and promoting allocative efficiency) and incentivising productive efficiency gains.

18.59 Any remedy imposed must also be proportionate and transparent.

Remedy options

18.60 We consider that there are two potential options to address the pricing concerns we have identified for TRCs and SFIs:

- Basis of charges; or
- charge control.

18.61 We now set out an analysis of these options in light of consultation responses. In doing so, we abstract from the detail of the remedy (including, for example, the specific approach to returns which was raised as a concern by BT). This is because we do not consider that these detailed points fundamentally affect the analysis for identifying the form of our remedy. Rather, we consider these points as part of the detail of the remedy below.

Basis of charges

18.62 A Basis of charges obligation would effectively limit BT’s pricing freedom so that TRC and SFI charges reflect costs (i.e. achieving allocative efficiency).

18.63 While a Basis of charges obligation ensures that BT is always able to recover its incurred costs, it does so irrespective of whether they are efficiently incurred or otherwise, meaning BT would have limited incentives to minimise unit\(^{1287}\) costs. However, by constraining prices to reflect costs, it may reduce somewhat the incentive to inflate the number of hours/modules required as BT would only ever recover its costs (although this incentive will depend in part on the measure of cost used).

18.64 Further, having analysed cost, revenue and volume data received from BT since the consultation, we have significant concerns around its implications for a Basis of charges obligation. First, analysis of the aggregate TRC and SFI data received from BT suggests that its estimate of FAC has varied significantly (particularly when considered on a unit basis) during the last review period. Therefore we are concerned that a Basis of charges approach could potentially lead to significant price fluctuations over this review period, creating pricing uncertainty among CPs. Secondly, the issues we have with BT’s aggregate cost data (discussed further below, see paragraph 18.81 onwards) raises concerns around the reliability of the data for a Basis of charges obligation. Such variability would also reduce the transparency of the obligation and the degree of certainty provided to stakeholders, as the cost levels are known only with a time lag to Openreach’s customers and competitors.

\(^{1287}\) Units are, broadly speaking, hours for TRCs and modules for SFIs.
18.65 Therefore in light of the above we continue to consider that the lack of productive efficiency incentives and the risk of significant fluctuations due to the interactions with cost allocation (including the uncertainty and risk of gaming this may create) are likely to outweigh any allocative efficiency benefits of this approach. We consider this to be the case for both TRCs and SFIs. Therefore we do not consider a Basis of charges obligation to be appropriate for TRCs or SFIs.

Charge control

18.66 A charge control provides a means of safeguarding consumers and downstream markets from excessive pricing by constraining prices and limiting any increases during the review period. It also drives productive efficiency in the regulated firm (which in turn creates efficient pricing signals for the whole industry) thereby imitating the effect of a competitive market. Incentives to increase efficiency arise because if the firm can reduce its costs below the level expected when the cap was set then the firm retains the increased profits, at least for the period the control is in place. This ability to earn profits in excess of the cost of capital can drive innovation and investment, thereby also providing incentives for dynamic efficiency.

18.67 We acknowledge that these productive and dynamic efficiency incentives mean prices can diverge from costs over the life of a price cap (i.e. if the costs of price-capped services deviate from the trajectory of prices or charges established by the control), potentially undermining allocative efficiency. However, in establishing price caps regulators are able to ensure that allocative efficiency objectives are also met through the review mechanism and periodic setting of new controls. Therefore, we consider that the trade-off between efficiencies can be managed such that the benefits of productive and dynamic efficiency outweigh the potential for allocative inefficiency within part of the review period.

18.68 We recognise that the problems with BT’s cost data, including the apparent volatility in costs, discussed further in paragraph 18.81 onwards, also mean that it is difficult to set the level of any charge control. However, we also consider that a charge control would provide certainty and transparency for stakeholders with regard to charges over the course of this review period (which may not be the case under a Basis of charges obligation, as discussed above). We note that EE, Sky, TalkTalk and Vodafone agreed with our proposal to impose a charge control, as summarised above.

18.69 For these reasons, we consider that imposing a charge control would more appropriately address the excessive pricing risk we have identified for both TRCs and SFIs than would a Basis of charges obligation. This is on the basis that it would constrain the risk of excessive pricing by setting maximum charges in advance and provide more pricing certainty than a Basis of charges obligation. We also note that it will better provide efficiency incentives which might otherwise be lower given BT’s SMP in the fixed access markets being reviewed, in terms of minimising costs (as it can keep any gains within the review period) and potentially reducing somewhat the incentive to inflate the number of hours/modules required (as BT only receives the regulated price, although this incentive will be partly affected by the basis for the charge control). We therefore conclude that it is appropriate to impose a charge control on BT for TRCs and SFIs. We discuss the details of the charge control below.

18.70 We note [••]. However, given the issues around what such an obligation would look like for TRCs and SFIs and the potential for significant variations (as discussed in paragraph 18.64), we consider that requiring BT to simultaneously comply with a
Basis of charges obligation as well as the charge control could be incompatible, complicate compliance, and lead to regulatory uncertainty. Further, we are applying a charge control to each and every charge (as discussed below) rather than a basket of services, and so it is not clear why additional cost orientation obligations – potentially used alongside a charge control to bound flexibility on individual prices within that charge control – would be required. Finally, we consider that a charge control is the most appropriate and proportionate remedy to address our concerns, and as such do not consider that imposing a Basis of charges obligation in addition would be proportionate.

**Charge controls**

18.71 In order to inform the level at which to set the TRC and SFI charge controls, it is useful to consider the current financial performance of both sets of services. Before we set out this analysis, we discuss:

- the appropriate cost standard for TRCs and SFIs, including the role of a ‘margin’; and

- the available data we have used for our analysis.

**Cost standard**

18.72 We consider that FAC remains an appropriate cost standard. In particular, we consider it appropriate that BT should be able to recover more than just its incremental costs of providing TRCs and SFIs. Using FAC will allow the recovery of directly allocated costs, most obviously those involved with the engineer’s time (including travelling time and associated costs such as taxes, holidays and employer pension contributions) and will also allow recovery of a reasonable allocation of more indirect costs, such as costs associated with vehicles, service centre costs, training, and general overheads. The costs of provision need to allow for a normal profit to be earned consistent with achieving an appropriate return on capital employed. We note that TalkTalk agreed that FAC was the appropriate cost standard.

18.73 We note that Sky argued that we should move towards a LRIC approach in line with our proposals for “key migration services”\(^{1288}\) (on the basis that both involve engineering activity and can impact consumer switching, so should be treated in the same way). However, the presence of common costs for services provided over BT’s network mean a mark-up over LRIC for individual services is usually seen as necessary for sustainability so as not to undermine overall cost recovery (this is discussed further below). Where services are priced at (or even potentially below) LRIC, it is typically because wider considerations (such as policy, competition and/or efficiency arguments) justify such an approach. This is the case for migration services such as GEA migration, which directly affect consumer switching costs and therefore the strength of retail competition (as set out in Section 12). However, contrary to Sky’s argument, it is not clear that where TRCs and SFIs are incurred they are as fundamental to switching as migration services, particularly as they appear less likely to be incurred as part of provision jobs and more likely to occur once a consumer has

\(^{1288}\) I.e. those services which allow migration of customers from one CP to another.
already switched.\textsuperscript{1289} Therefore, given wider considerations do not seem relevant for TRCs or SFIs, and incentive reasons in favour of a mark-up over incremental costs presented below, we consider LRIC is not appropriate in this case.

18.74 In considering the FAC for TRCs and SFIs however, we need to ensure we remain as consistent as practicable with the cost allocations used in the LLU and WLR (WFAEL) charge controls, which could otherwise leave costs under- or over-recovered from TRCs and SFIs if not approached on a consistent basis (due to the reallocation of costs between these related services).\textsuperscript{1290} The LLU and WLR (WFAEL) charge controls are based on the allocation methodologies presented in BT’s 2011/12 RFS, which are the allocation bases upon which we consulted in July 2013 (see Section 5 in Volume 2 and Annex 22). We have borne this in mind in setting our final TRC and SFI charge controls, but taking account of various issues relating to relevant data, such as to set an appropriate charge control (as set out below).

**Additional margin**

18.75 BT has questioned its ability to earn a sufficient margin under a FAC-based approach to TRCs and SFIs, arguing that such an approach would allow it to only earn a small margin due to the low capital employed in these services (and so such an approach is disproportionate). It also argued that this will undermine its incentives to provide the services and to do so at a suitable quality, and as such argued that we should allow an additional margin in excess of FAC to reflect this.

18.76 There are a range of measures which can be used to assess returns, but our typical approach to assessing a reasonable rate of return for BT is based on a return on

\textsuperscript{1289} Data from Openreach (Table 1, Openreach response to the January 2014 FAMR Consultation), suggests that only approximately \([\%]%)\) of all TRC volumes are providing customer wiring and extensions beyond the NTE on WLR and MPF provision jobs (with the majority instead being repair jobs (\([\%]%)\) and the remainder being volume deals and events and exhibitions (\([\%]%)\) and other activities (\([\%]%)\)). \([\%]\) We also note that Openreach \([\%]\). Paragraph 9, Openreach supplementary submission relating to Ofcom’s fixed access market reviews and charge controls, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/famr-2014/responses/Openreach - _Supplementary_submission.pdf}.  

\textsuperscript{1290} In its response to the consultation, Sky appeared to suggest that this preference for consistency with the LLU and WLR (WFAEL) charge control is the reason we have adopted a FAC-based approach for TRCs and SFIs (see paragraph 18.15). However, our preference actually relates to a desire for consistency in the cost allocations between the two, rather than consistency of cost standard. In particular, consistency with the LLU and WLR (WFAEL) charge controls is not a reason for selecting FAC as the appropriate cost standard for TRCs and SFIs, because, as Sky states, the charge control modelling can allow for certain services to make lower or no contributions to common cost and for other services to make larger contributions as a result. Rather, the issue here is that, having determined FAC is the appropriate cost standard for TRCs and SFIs, we consider it necessary to ensure that the common cost allocations used to calculate FAC here are consistent with the LLU and WLR (WFAEL) charge control as otherwise costs could be over- or under recovered across the portfolio of services covered.
capital employed at its WACC. In a competitive market, while annual returns in any given year may be above or below the cost of capital, over the longer term we would not expect average returns to be materially above or below this level.

18.77 In order to achieve this at an aggregate level, individual products/services can be priced such that they cover their incremental costs and potentially also include a mark-up over and above this to contribute to the recovery of common costs, including a return on capital employed (reflecting the mean capital employed for that particular service). Different products and services can make differing contributions to common costs, and therefore the overall return achieved by BT, for a variety of reasons, which include efficiency and competition considerations.

18.78 Within this context, we agree that only allowing a firm to recover its marginal costs for an individual product or service can have negative incentives for its provision and quality, as the firm will be financially indifferent between providing the service and not (as for each extra unit, it only receives the costs of providing that unit). However, in the event the firm is earning in excess of marginal costs, it will no longer be indifferent as for each unit it sells it is receiving a contribution to the wider recovery of its common costs (and conversely, for each unit it stops selling, it will also lose that contribution). As such, we do not consider that regulated TRCs and SFIs require an additional mark-up in excess of FAC to maintain these incentives, given that the respective FAC estimates include an allocation of common costs (including a return on any capital employed in their provision).

18.79 In addition, we are not able (and indeed are not seeking) to regulate the charges of TRCs and SFIs which do not fall within the network access requirement, and so we

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1291 A company’s cost of capital can be thought of as the minimum rate of return which investors require in order to invest in that company. While WACC is used to assess returns for BT, we note that we have adopted a different approach in other services such as post where we considered an Earnings Before Interest and Tax ('EBIT') margin for assessing Royal Mail’s reasonable commercial rate of return. The reasons for this different approach to assessing returns at the firm-level is due to the different circumstances of each – for the rationale underlying the decision in post, see Section 5, Ofcom, Securing the Universal Postal Service – Decision on the new regulatory framework, 27 March 2012, http://stakeholders.ofcom.org.uk/binaries/consultations/review-of-regulatory-conditions/statement/statement.pdf. At an individual product level, different products contribute to cost recovery (including the overall EBIT margin) to varying degrees for post, just as different products contribute to BT’s cost recovery (including the overall WACC) to varying degrees. As such, we do not consider that the presence of this alternative approach raises consistency concerns (as argued by BT) in relation to our approach to BT’s rate of return generally, or for our approach to TRCs and SFIs specifically.


1293 Conversely, for each unit lost, the firm’s lost revenue is equal to its cost savings from no longer providing that unit, and so it is indifferent to the fact that it has lost that unit.

1294 We considered similar issues in relation to excess construction charges (‘ECCs’), where we observed high margins in excess of costs and stated that, on the basis that Openreach deploys minimal capital expenditure in the provision of ECCs, no margin above the recovery of incremental costs and a contribution to overheads (including an appropriate return on any capital employed in the provision of ECCs) is justified. See Section 22 of Ofcom, Business Connectivity Market Review - final statement, 28 March 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity/statement/Sections17-24.pdf.
do not consider BT’s Option 1 (summarised above) to be appropriate, irrespective of our view of the need for an additional mark-up in excess of FAC.  

18.80 We thus do not consider this argument any further here and so our analysis of financial performance is based upon BT’s revenues relative to its reported FAC (i.e. with no additional adjustment).

Data

18.81 In order to inform our charge controls, we sought annual cost, revenue and volume data from BT for the period 2009/10 to 2012/13, for both TRCs and SFIs. Following subsequent analysis of this data, we have significant concerns with the reliability of this data in absolute terms, and in any event note that BT has a great deal of discretion over how it calculates costs which it appears to have exercised.

18.82 Having considered both the TRC and SFI aggregate data over this time period, we have identified various (and in some cases counter-intuitive) trends in both BT’s cost and revenue data which BT has been unable to fully explain. For example, labour-related operating costs decreased in absolute terms between 2011/12 and 2012/13 (using the same 2011/12 methodology) for both TRCs and SFIs, despite volumes increasing. Similarly, TRC labour-related operating costs increased (by approximately \[3\%\]) between 2010/11 and 2011/12, while TRC hours decreased over the same period (by approximately \[2\%\]). BT has not been able to fully explain this outcome for either TRCs or SFIs (and we note that one reason put forward by BT in relation to this reduction in labour costs for SFIs was a previous misallocation of costs to SFIs). Therefore we have concerns with both the underlying absolute figures and the reliability of any trends inferred from this data.

18.83 We also have additional specific concerns in relation to TRCs. Firstly we are particularly concerned with BT’s approach to calculating its most recent TRC cost estimates. BT informed us that TRC costs appeared lower than it expected in 2012/13 when initially generated for the 2012/13 RFS. BT stated that it was unable to identify reasons to explain this outcome and explained that it had sought to derive what in its view was a more ‘appropriate’ level of costs by reallocating costs from a range of services (including WLR, wholesale access, Traditional Interface Symmetric Broadband Origination (‘TISBO’), WBA, Alternative Interface Symmetric Broadband Origination (‘AISBO’) and ISDN) to the extent necessary so that, in light of its revenues, TRCs would be achieving a \([\%]\)% margin in 2012/13. The margin used was based on an internal business case by Openreach’s Copper product management team which forecast TRC margins to be between \([\%]\)-\([\%]\)% for 2013/14. While we are not using this data specifically in our analysis, we consider that these issues cast doubt on the reliability and consistency of BT’s TRC cost data in absolute terms.

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\[1295\] Our analysis of the data provided by BT indicates that it has a poor understanding of the aggregate costs associated with these services. Indeed, before 2012/13 BT had been earning revenues for TRCs and SFIs below its FAC (as per the respective years’ RFS) and so it is not clear why it asserts that a return in excess of FAC is required to provide the appropriate investment and efficiency incentives.

\[1296\] We discuss the general incentives under our final approach in paragraph 18.189 onwards.

\[1297\] BT response to question 16 of the s.135 notice of 22 November 2013.

\[1298\] BT response to questions 3 and 4 of the s.135 notice of 22 November 2013.
Secondly, we note in relation to TRCs that there were some counter-intuitive changes in BT’s average revenue per hour (i.e. total TRC revenue divided by TRC billed hours, excluding bid/volume-related TRCs). Using the data BT provided for TRCs excluding volume deals, its average hourly revenue decreased from £[X] in 2011/12 to £[Y] in 2012/13. This would tend to suggest BT’s average TRC price fell in 2012/13 yet we note that, based on the Openreach price list, all but one price for TRCs were higher in 2012/13 compared to the 2011/12 charges. BT was unable to explain this trend in its average revenue data.

Thirdly, BT stated that the total TRC hours provided were based on billed hours, but that these are likely to be significantly smaller than the engineering hours actually expended on TRCs (and also in any event excluded hours related to volume/bid work), and included an estimate for hours relating to TRCs which do not go through the Atlantis billing systems (accounting for approximately [Z]% of TRC revenue).

In relation to SFIs, we also only have two years of directly comparable cost and revenue data given BT’s introduction of the new set of SFI modules in March 2010 and the subsequent year of parallel provision with the older SFI product (BT is unable to split the data between the two). As such it is not possible to observe trends in this data.

In light of the above we have significant concerns with the reliability of BT’s aggregate financial data (especially for TRCs). Therefore, while we consider that this data provides an indicative view of the current financial position of TRCs and SFIs, we do not consider that we can fully rely on this data to provide a precise view in absolute terms. It is within this context that we have considered BT’s data (and supplemented it with additional information) in order to set out our approach to each charge control below.

We now set out our analysis of TRCs and SFIs separately, including the financial performance of each, and present our final charge control for each in light of consultation responses. We then consider other issues which affect both controls, including indexation, and the incentives they create, before setting out the final charge controls for both services.

**Charge control for TRCs**

We now discuss the appropriate charge control levels for TRCs. This sub-section is structured as follows:

- we first set out our analysis of the current financial performance for TRCs, considering RFS data and internal documentation from BT, where we determine that TRC prices (and revenues) are likely to be in excess of FAC;

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1299 BT response to question 5(b) of the s.135 notice of 25 October 2013.
1300 Openreach price list for Time Related Charges, available here [http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=hcaYjIWyegP2u2KS8F TdcOBScuiM1Open5F8dVePnh8UMnGHsOc0vO163bJlh34D91D7M0q8u%2F%0AlisgtlFAKw%3D%3D](http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=hcaYjIWyegP2u2KS8F TdcOBScuiM1Open5F8dVePnh8UMnGHsOc0vO163bJlh34D91D7M0q8u%2F%0AlisgtlFAKw%3D%3D).
1301 BT response to question 7 of the s.135 notice of 22 November 2013.
1302 BT response to question 1 of the s.135 notice of 22 November 2013.
1303 BT response to question 5(c) of the s.135 notice of 25 October 2013.
we then discuss our charge control analysis for the main TRC services, where we consider both the price reduction required to bring charges more into line with costs and also whether an additional reduction is necessary to reflect BT’s hourly increment billing approach (which means revenues may still exceed costs even if hourly charges reflect hourly costs);

we set out our analysis of other considerations, including the timing of the price change, interactions with volumes, and potential changes to TRC service design; and

finally we discuss other TRC services, including store items and Internal Network Termination Equipment shifts and external shifts or rearrangement of line-plant from distribution point.

Current financial performance

18.90 In considering revenues and costs for TRCs, we acknowledge that TRCs are provided across BT’s portfolio of products and not just for LLU or WLR services (e.g. they are also provided for Ethernet). However, TRCs do not differ depending on whether they are bought for WLR or LLU, and BT currently sets the same price across all TRCs irrespective of the access product bought (i.e. WLR, LLU or Ethernet). Therefore, for the purposes of assessing the current financial performance of TRCs, we consider the aggregate data across all TRCs, as we do not consider there to be a need to make a distinction between the wholesale products they are provided for.\footnote{1304}

Aggregate RFS data

18.91 On the basis of the aggregate data we have received from BT, it appears that revenues are currently above costs for TRCs. In particular, 2012/13 revenues were significantly in excess of FAC (approximately £[\%], which is equivalent to a mark up of [\%] of FAC; prices would need to fall by [\%] to bring them into line with costs).\footnote{1305}

18.92 We recognise that costs in some previous years appear to have exceeded revenues – for example in 2011/12 revenues appear to be less than costs (by approximately £[\%]). However, this appears to be at least in part a consequence of a large rise in estimated costs in 2011/12 compared to 2010/11 (of approximately [\%], despite an apparent decline in TRC hours). Therefore we have serious concerns around whether the 2011/12 figure truly reflects increased costs, and note that BT was also unable to explain this occurrence in relation to labour-specific costs.\footnote{1306} In any event, we

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\footnote{1304}{While we use the data for all TRCs for our analysis (given we would not expect costs or prices to vary significantly according to the wholesale product they are provided for), we note that here we are only imposing a charge control for those TRCs that fall within the network access requirement.}

\footnote{1305}{BT response to question 1 of the s.135 notice of 22 November 2013, updated in the letter from BT of 4 March 2014. 2012/13 costs using the methodology from the 2011/12 RFS. Revenues were [\%] and total FAC was [\%]. We further note that BT was only able to reconcile these costs with revenues by changing the cost allocation for the 2012/13 RFS in a way that we consider to be inappropriate (as discussed above). By making this allocation change, there remains an (albeit smaller) excess of revenues over FAC for 2012/13 even under BT’s revised cost data. Revenues were £[\%] on this basis and costs were £[\%], which implies a mark-up of [\%] of FAC.}

\footnote{1306}{BT response to questions 1 and 5 of the s.135 notice of 22 November 2013, updated in the letter from BT of 4 March 2014.}
consider that whether costs exceeded revenues in earlier years is of limited importance given BT was free to set prices as it saw fit (subject to its cost orientation obligation) and there was a large increase in revenues in 2012/13. Rather, the key issue for us is whether current prices are likely to be cost reflective, and based on the information we have available we consider that this is unlikely.

Internal documents

18.93 We consider that the view that revenues exceed costs is consistent with internal pricing documents received from BT. These set out that 2012/13 and 2013/14 TRC prices were set in excess of BT’s FAC estimates at the time of the respective price changes:

- in relation to 2012/13 prices, BT set prices of £58 for the visit charge and £57 for the hourly charge. Its relevant internal pricing paper included FAC estimates of £[X] and £[X] for the visit charge, and £[X] and £[X] for the hourly charge; and

- in relation to 2013/14 prices, BT set prices of £60 for the visit charge and £60 for the hourly charge. Its relevant internal pricing paper included FAC estimates of £[X] for the visit charge, and £[X] for the hourly charge.

18.94 We consider that this information supports our conclusion that TRC prices are likely to be in excess of costs.

BT’s submissions in relation to our previous position

18.95 As noted in the January 2014 FAMR Consultation, BT referred to the 2012 LLU WLR Charge Control Statement where we stated that BT’s overall returns for TRCs were in line with our normal expectations for Openreach services (suggesting that they are not overcharging). BT argued that it had not changed its pricing approach since then, and so for consistency we should maintain the same approach. Firstly, we note that the previous review did not go into a significant amount of detail in relation to the TRC data (and less than we have done now). Secondly, at the time the charge control was set in 2009/10, the EBIT margin for TRCs ([X]%) was similar to the EBIT margin for Openreach as a whole ([X]%). However, TRCs are a capital light service (as stated by BT) and as such in a competitive market we would typically expect the EBIT margin to be lower for TRCs than for Openreach as a whole (which is much more capital intensive). In light of this, and having considered TRCs afresh as part of this review (including the more detailed data information received from BT), we consider such a comparison based on EBIT margins would have been generous to

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1307 Internal pricing review paper, BT response to question 1 of the s.135 notice of 6 January 2014.
1308 Internal pricing review paper, BT response to question 2 of the s.135 notice of 13 December 2013.
1309 While this data provides a useful directional view of prices relative to costs, we do not consider these cost figures to be sufficiently robust or reliable for the purposes of setting a charge control, not least as they appear to be subject to similar issues as with BT’s aggregate cost data discussed above (see paragraph 18.81 onwards). For example, there are two different FAC estimates for both the hourly cost and the visit cost within the relevant BT internal pricing paper. The variability in the FAC estimates between the two papers is also surprising, particularly as the pricing papers are only ten months apart. Indeed, BT commented that the change in costs [X]. Internal pricing review paper, BT response to question 2 of the s.135 notice of 13 December 2013.
BT and no longer consider such a high EBIT margin on TRCs to be appropriate. Therefore, we consider it appropriate to seek to reduce the returns to a level that better reflects costs (which include a return on capital employed to the extent relevant).

18.96 We recognise that this represents a policy change from the previous review, and also acknowledge that regulatory consistency is important, but in this case we consider that concerns around such consistency are outweighed by the importance of ensuring customers are not overcharged.

**Charge control analysis for the main TRC services**

18.97 In light of the evidence available, we consider BT is currently earning revenues in excess of costs for TRC and as a result consumers are experiencing harm in the sense required by section 88 of the CA03. In light of this view, we do not consider a safeguard cap at current price levels to be appropriate since it would allow BT to continue setting a price that exceeds the underlying costs.

18.98 As a result, we have sought an alternative approach to setting a charge control for TRCs which will result in a price reduction from current levels in order to bring charges more into line with costs. In order to address the consumer harm it is necessary for us to identify how large the reduction in prices should be. However, given the data issues, we consider that setting a level will ultimately require an exercise of regulatory judgement (having regard to our statutory duties).

18.99 In the January 2014 FAMR Consultation we proposed a 12-40% reduction to all 2013/14 TRC charges to make them more cost reflective, with a base case of 16%. We now need to determine the final charge controls and in order to do this, in light of consultation responses and further analysis, we have considered three broad steps for determining the appropriate rate reduction:

- **Step 1:** identify appropriate reduction required to bring charges more into line with costs;
- **Step 2:** consider if an additional reduction is required due to the rounding in BT’s billing approach (i.e. it bills in increments of one hour irrespective of the job duration) in order to bring revenues into line with costs; and
- **Step 3:** applied total reduction to TRC charges to give final prices.

18.100 We now set out our analysis of each of these steps.

**Step 1: alignment of prices with costs**

18.101 In order to carry out this step, we have first identified an appropriate cost estimate for TRCs, and then considered how this can inform the appropriate charge reduction.

**TRC cost estimate**

18.102 As discussed above, we do not consider that the aggregate data from BT provides a sufficiently reliable indication of the extent to which prices exceed FAC in absolute terms for the purposes of setting a charge control. This is because over the four year period absolute revenues and costs have moved counter intuitively. We have therefore used the data we have available to estimate the underlying hourly TRC
costs for 2012/13. We have based our FAC estimate on the hourly breakdown of engineering rates for TRCs (using information sourced from Openreach’s management accounts and information received from BT\textsuperscript{1311}). We have then uplifted this estimate to allow for an estimate of overhead costs.

18.103 In the January 2014 FAMR Consultation we proposed calculating the uplift for overhead costs based on data from the RFS. Below, we explain why it has been necessary to amend our method for calculating overhead costs. We then set out the alternative way in which we have calculated the uplift for these costs.

18.104 In the January 2014 FAMR Consultation, we used an overhead uplift of 48\% based on analysis provided by BT that was arrived at as follows.

- the hourly breakdown of engineering rates for TRCs provided by BT did not include general overheads. BT suggested an uplift of 55\% be applied saying “This percentage is an estimate based on an analysis of overhead costs in the RFS”\textsuperscript{1312};

- we requested the analysis behind the 55\%. BT supplied a schedule setting out how the 55\%\textsuperscript{1313} was calculated, which then included an adjustment reclassifying stores, management, travel, and subsistence as direct costs rather than overheads, which it stated was consistent with the hourly breakdown of engineering rates it previously provided to arrive at an uplift of 51\%. This was based on the 2012/13 RFS; and

- at the time of the January 2014 FAMR Consultation we were planning on using the 2012/13 RFS data restated for the 2011/12 allocations for the LLU and WLR (WFAEL) charge controls. We felt it appropriate to use, if possible, 2012/13 costs and 2011/12 allocations. Therefore we made an adjustment to BT’s 51\% uplift based on the movement of the ratio of 2012/13 ‘direct’ to ‘indirect’ costs using The report requested by Ofcom for the year ending 31 March 2013.\textsuperscript{1314} This report showed the impact on the 2012/13 RFS from using the 2012/13 and the 2011/12 allocations. Our adjustment moved the uplift down to 48\%.

18.105 Although the figure of 48\% was based on BT data, in its response to the January 2014 FAMR Consultation, Openreach stated:

“It is unclear how Ofcom has arrived at this figure. Regardless of this, Openreach considers that the correct uplift for overhead costs is 67\%. This has been calculated based on the regulatory costing system ‘run’ used to prepare the October Report, which presents the
2012/13 RFS costs using the 2011/12 cost allocation methodologies.  

18.106 BT then supplied a schedule showing how it had calculated the figure in its consultation response (67% uplift, 2012/13 RFS on 2011/12 basis). The format of the schedule was the same as that for BT’s previous estimate of 51% (2012/13 RFS).

18.107 On 5 March 2014, in connection with the LLU and WLR (WFAEL) charge controls, we wrote to BT with our decision that we would be using the 2011/12 RFS as the basis of setting the charge control. In order to be consistent with the LLU and WLR (WFAEL) charge control, we asked BT what the uplift would be for 2011/12. BT provided a revised estimated of the appropriate uplift of 102% for overhead costs for 2011/12, calculated on the same basis as the previous figures they had supplied (i.e. for 2012/13 and for 2012/13 on a 2011/12 basis).

18.108 We have considered whether it is appropriate to estimate the uplift for overhead costs based on this RFS data. We are concerned that this is not a reliable method for estimating these costs given the volatility in the estimated uplift. There are large movements in the estimated uplift, particularly between 2011/12 and 2012/13 even when considered on a (consistent) 2011/12 basis. As detailed above, we have asked BT for an explanation via statutory information requests and informal discussions. BT has been unable to sufficiently explain these movements. We therefore do not consider that this data provides a reliable source for an assessment of the appropriate uplift.

18.109 We have therefore considered whether there is alternative way of estimating these costs. While we have concerns about the aggregate FAC information BT has provided (due to the counterintuitive way total costs move with revenues and volumes, see paragraph 18.81 onwards), the proportion of pay related cost to overheads in this data is, by contrast, relatively stable for both SFIs and TRCs. Notwithstanding the limitations of this data, we consider that it is the best means of estimating the uplift for overhead costs, given the significant drawbacks with the other information available to us.

18.110 Based on this data for both SFIs and TRCs, the range for uplift varied from 49% to 61% with an average of 54% for the years 2009/10 to 2011/12. Therefore in light of the concerns with the other data provided by BT, we consider it is appropriate and reasonable to use 54% as the appropriate uplift for overhead costs. We have not used the 2012/13 data or the 2012/13 data on a 2011/12 basis in light of its instability as set out above and because doing so would be inconsistent with the LLU and WLR (WFAEL) charge control, where these bases were rejected (see Section 5 in Volume 2 and Annex 22).

18.111 While the pay and pay related cost data provided to us by BT related to 2012/13, the main element of the cost was hourly engineers’ pay which was unaffected by the

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1316 Despite supplying an update to the figure presented in the consultation response of 78% (follow up response to the s.135 of 22 November, received 4 March 2014). BT subsequently confirmed that the correct uplift for 2012/13 on a 2011/12 basis was 67% as presented in its consultation response (Email from Openreach to Ofcom of 7 March 2014).
1317 BT, follow up response to the s.135 notice of 22 November 2013, received 19 March 2014.
2012/13 RFS allocations (in connection with which the issues above arise). Those engineering rates are a principal element of the costs of TRC provision. We therefore consider that this data is appropriate for our cost calculation. This has the benefit of being the most up to date data available to us, while not undermining consistency with the LLU and WLR (WFAEL) charge controls (given it is not affected by the cost allocation changes). Moreover we have compared the Direct Labour hourly rate to similar information provided to us for other purposes. The figure of £[££] (excluding overtime) is similar to the £[££] used in the Single Jumpered dispute, which provides comfort that this estimate is reasonable. Accordingly, we use the former figures as the basis of our cost estimate, and to which we apply the uplift as described above to provide our FAC estimate.

18.112 On the above bases, we have updated our estimate of the indicative TRC hourly cost, both as an average hour and a basic (i.e. excluding overtime) hour. We note that these cost estimates appear similar to estimates provided in BT’s internal pricing papers as discussed in paragraph 18.93.

Table 18.5: Estimated hourly TRC costs 2012/13

<table>
<thead>
<tr>
<th></th>
<th>Average hourly cost (i.e. including overtime) (£)</th>
<th>Basic hourly cost (i.e. excluding overtime) (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Pay costs</td>
<td>£[££]</td>
<td>£[££]</td>
</tr>
<tr>
<td>Other pay related costs</td>
<td>£[££]</td>
<td>£[££]</td>
</tr>
<tr>
<td>General overheads</td>
<td>£[££]</td>
<td>£[££]</td>
</tr>
<tr>
<td>(based on [££]% uplift to labour costs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>£[££]</td>
<td>£[££]</td>
</tr>
</tbody>
</table>

18.113 We note that TalkTalk has presented two alternative measures to estimate costs for TRCs (see paragraph 18.17), but we do not consider these to be appropriate:

- **RFS data**: for the reasons set out above (see paragraph 18.81 onwards), we remain of the view that the RFS data does not provide a suitably robust basis for estimating the hourly cost;

- **alternative benchmarks**: while the data on Qube’s prices that TalkTalk has provided gives an alternative view of the costs for TRCs, we do not consider that it provides a suitable benchmark for us on which to base this charge control. This is because it is not clear that the services provided are comparable and, as such, it is not clear that the underlying costs of provision are comparable. For example, Qube seems to be typically used by TalkTalk for “various in-home installation and repair services to TalkTalk customers e.g. set up of broadband, TV etc,” which seems distinct from the much wider (and in some cases more technical) work

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1318 Openreach’s response to the s.191 notice on Single Jumpered Dispute, 17 August 2013.
1320 Although we note that it is not clear exactly how the estimates in the pricing papers were calculated.
carried out as part of a TRC, and so we might expect labour costs to vary accordingly. Indeed, this is potentially reflected in the fact that our estimate of BT’s incurred hourly labour cost (as set out in Table 18.5) is \[\times\]. We note in this regard that Openreach has stated \[\times\].\textsuperscript{1322} It is for similar reasons that we consider that \[\times\] is not directly comparable for the purposes of setting a charge control, as, while it covers a wide range of activities, these activities are focused in the customer premise and appear to be of a less technical nature than what can be required under a TRC.

18.114 Therefore, in light of the information available to us (as well as the cost estimates we have used elsewhere), we consider that our estimate of the average hourly cost is reasonable and provides an appropriate input for setting a charge control.

**Level of price reductions based on cost estimate**

18.115 To inform our judgement about the level of price reductions which are appropriate for the TRC charge control, we have considered what observations can be drawn from comparisons of our cost estimate with TRC revenues. In this regard we need an appropriate revenue figure, for which we have identified two potential options. First, we have considered the average revenue per billed TRC hour (which provided the upper bound for our consultation range) but we have concerns about the reliability of this data. In particular, as stated in the January 2014 FAMR Consultation, it is based on BT’s reported volumes which not only do BT state are likely to be too low but which also contribute to counterintuitive average TRC revenue trends over time (as discussed in paragraph 18.84). Additionally, we note that using this as the revenue figure would suggest a 37% reduction to 2012/13 prices was necessary\textsuperscript{1323}, which would result in hourly charges which are substantially below our estimates of the 2012/13 hourly costs.\textsuperscript{1324} Therefore we do not consider it appropriate to place significant weight on this.

18.116 As an alternative, we have considered whether prices could provide an appropriate revenue basis for this analysis. We have first considered 2012/13 prices against our 2012/13 cost estimate (which provided the lower end of our consultation range).\textsuperscript{1325} However, as set out in the consultation, we are concerned about relying on 2012/13 prices and costs as since then there has been a further price increase across all TRCs (in April 2013, of approximately 4% for a ‘Standard Chargeable Visit’ and 5% for an ‘Additional Hour’). While costs may well have also increased in this time (see the indexation discussion below), it is questionable whether costs have risen by as much as this price increase. Therefore current charges could be further in excess of costs now than they were in 2012/13.

\textsuperscript{1322} Paragraph 18, Openreach supplementary response to the December 2013 LLU WLR and January 2014 FAMR Consultations, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/famr-2014/responses/Openreach_Supplementary_submission.pdf}.

\textsuperscript{1323} We note that this figure is lower than in the consultation. This is as a result of our revised cost estimate detailed above.

\textsuperscript{1324} In this calculation we apply the 37% reduction to the 2012/13 price (rather than the current price) purely for the purpose of comparing with our hourly cost figure (which also relates to 2012/13). However, the same conclusion holds even when applied to the latest TRC hourly charge of £60.

\textsuperscript{1325} Specifically, we compared our basic hourly cost estimate to the standard hourly price charged by BT in order to avoid comparison issues around overtime etc.
18.117 In light of this, we have considered whether current prices could provide an alternative basis against which to compare our cost estimate. However, because we are setting the charge control for 2014/15 we need to uplift our 2012/13 cost estimate to determine the extent of price reduction required. To do this, we have uplifted our basic hourly cost estimate (£\[\times\]) by our indexation rate of 0.2% per annum (as set out below, see paragraph 18.181 onwards), which gives an estimate of the hourly TRC cost for 2014/15 of £\[\times\]. When we compare this with the current Additional Hour price on a normal working day (£60), it would suggest a price reduction of approximately 12.3% from current levels is required to bring them into line with our estimate of costs.

18.118 As set out above, we consider that a reduction in TRC prices is necessary to make them more cost reflective. In order to set a charge control it is necessary therefore for us to decide on an appropriate reduction figure. However, as discussed throughout, there are limits to the robustness and reliability of the data available to inform this decision. Therefore in making this decision we have exercised our regulatory judgement based on the information available. It is on this basis that we consider that the comparison between the current hourly price and our estimate of costs provides a reasonable base for this decision, particularly given the limitations of the alternative data. Therefore, in our judgement, based on the information we have available, we consider a 12.3% reduction to current prices to be appropriate.

18.119 We note that Sky argued that the midpoint of the range in the January 2014 FAMR Consultation (which was 26%) would be a more equitable reduction given the data issues underlying both the top and bottom of the range. However, a rate reduction at this level would implicitly place equal weight on both the upper and lower bounds of the consultation range, which we do not consider appropriate. This is because we consider that using the average revenue per hour (which was presented as the upper bound of the consultation range) is unreliable for the reasons set out above (see paragraph 18.115). Rather, we consider that the issues around the upper bound would tend to suggest a reduction towards the lower end of our consultation range to make prices more cost reflective. Additionally, we have sought to reduce the impact of the issues with the lower end of our consultation range by uplifting the 2012/13 cost estimate to provide a 2014/15 cost estimate against which we can compare current prices (as set out in paragraph 18.117), in order to provide a more up to date picture. Therefore, and in the absence of alternative (and robust) information from stakeholders, we consider that a 12.3% reduction to TRC charges is appropriate and reasonable in order to bring them more into line with costs.

18.120 We consider that this 12.3% reduction should be applied to each and every 2013/14 TRC charge. While this figure is based on an hourly cost estimate relative to the price on a normal working day, we consider it appropriate to apply this reduction to each charge (including the ‘supplementary charges’) since charges outside of the normal working day are multiples of the respective ‘normal working day’ rates. Therefore in the absence of alternative information it seems reasonable to apply the same percentage reduction, which effectively maintains this ‘multiples’ structure, to bring charges more into line with costs. No stakeholder argued against this approach in response to the consultation. We note that this 12.3% figure will still ensure Additional Hour charges (and indeed all TRCs) make a contribution to common costs.

18.121 In relation to those TRC charges which include a visit charge as well as an hourly rate (e.g. ‘Standard Chargeable Visit’), this 12.3% reduction effectively applies equally to both elements as the price reduction is applied to the total price. This is on the basis that BT also appears to have previously applied its rate increases to the
combined charge (and indeed currently sets the same charge for the visit element and the hour element in a Standard Chargeable Visit).\textsuperscript{1326}

**Step 2: consideration of BT’s hourly billing approach**

18.122 While we consider that this price reduction would bring TRC charges more into line with costs, we consider that TalkTalk’s arguments about BT’s hourly billing approach raises legitimate concerns that the revenue BT actually receives per hour will exceed the costs.

18.123 In particular, a Standard Chargeable Visit (priced at £120) is currently made up of a £60 visit element and an hour of an engineer’s time (charged at £60).\textsuperscript{1327} Additional hours on top of this are also charged at £60, at full hour increments. Therefore for each Standard Chargeable Visit and Additional Hour BT bills for a full hour’s work, irrespective of the actual duration within that hour (i.e. it rounds up to, and charges for, the nearest full hour).\textsuperscript{1328} This remains the case under our consultation proposals, where the hourly rate was reflective of our hourly cost estimate. However, if BT engineers are not actually working for a full hour where these charges are incurred, BT will be receiving revenue for jobs in excess of the costs it actually incurs (e.g. if a job only takes 45 minutes, BT will only incur 45 minutes worth of costs, but would, under our consultation proposals, receive a price for that job which reflects the costs of a full hour). This is also a one-way gain for BT as where jobs slip into the next hour it can charge the next Additional Hour rate (i.e. it does not appear to be the case that there is a risk of under-recovery where job times exceed an hour, as the additional hour can be charged for). Put another way, when a job takes exactly one hour or multiples of one hour, BT’s charges reflect its costs, but in all other cases BT receives revenues which exceed its costs.

18.124 The intention of our proposals in the consultation was for TRC charges to reflect costs. Therefore we consider it is important to investigate this issue raised by TalkTalk as there appears to be a real risk that BT is able to earn revenue in excess of its costs as a direct result of its billing approach (which would be contrary to our intention). We have considered this issue specifically in relation to the Standard Chargeable Visit and Additional Hours, however as we explain below, we have had to make a variety of judgements and assumptions based on the information we have in order to conduct this analysis.

18.125 The rest of this sub-section setting out Step 2 is structured as follows:

- description of data received and our analytical approach;

\textsuperscript{1326} E.g. in its 2013 price changes for TRCs, BT set out a [\%] price increase to its TRC Standard Chargeable Visit total rate ([\%]). Internal pricing review paper, BT response to question 2 of the s.135 notice of 13 December 2013.

\textsuperscript{1327} I.e. as a Standard Chargeable Visit consists of the visit component and up to one hour’s work, we consider that the visit component charge is equal to the total Standard Chargeable Visit price (currently £120) minus the hourly rate (i.e. the price of an additional hour, which is currently equal to £60). This is confirmed in BT’s internal pricing papers provide in BT response to question 2 of the s.135 notice of 13 December 2013.

\textsuperscript{1328} BT stated that Openreach engineers will record the time spent on the job into the Work Manager system, and at the billing stage it is rounded up to the nearest hour in order to calculate the appropriate charge. BT response to question 1 of the s.135 notice of 23 April 2014. The data BT provided shows a proportion of TRC jobs do not get billed.
• analysis of visit-only jobs;
• analysis of jobs which incurred additional hour(s); and
• implications of this analysis for TRC prices.

Data and approach

18.126 In order to analyse this issue we have compared the minutes worked by BT on TRCs with the minutes it billed for (which, as a result of BT’s billing approach, are in multiples of one hour). If the minutes billed are in excess of the minutes worked, it would suggest that there is a risk that BT’s billing approach could lead to over-recovery if the price for up to an hour’s work reflects the cost of an entire hour of work.

18.127 We asked BT for TRC duration data to investigate this, and BT submitted data covering all TRC jobs between 19 January and 24 March 2014. Each job in this dataset has been classified by BT according to what is incurred – BT has classified the data by ‘Visit’ or ‘Visit+Stores’ (which we include in our ‘visit-only’ analysis) and ‘Visit+hours’ or ‘Visit+hours+stores’ (which we include in our ‘additional hour’ analysis). Therefore we have split the analysis between those jobs that are billed by BT as (and which therefore only incur) the Standard Chargeable Visit charge (which covers engineer work up to the first hour) and those which also incur additional hours beyond this, in order to reflect BT’s actual billing practices.

18.128 In relation to the actual time worked, for each job there are two sets of duration data:

• on-site time from the work manager system (we refer to this as ‘on-site time’): this is systems generated, but dependent on the engineer pressing the ‘start button’ at the right time during the job; and

• Total Time Entered by Engineer for TRC Billing (we refer to this as ‘engineer logged time’): this is a manual entry into the system by the engineer and should include all the time spent on site. This is what drives billing.

18.129 Given BT uses engineer logged time for billing purposes, we consider it appropriate to use this data rather than on-site time in order to analyse this issue as this will provide a view of actual minutes worked which reflects BT’s current billing practices. We have excluded jobs where durations were recorded as zero (which constitute a significant proportion of the full dataset considered) as this level of zero duration jobs seems unrealistic and is therefore potentially an error in the recording of the job duration by engineers. As such, their inclusion could unduly skew the minutes actually worked downwards and so risk overstating any issue as a result of BT’s hourly billing approach.

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1329 BT response to question 10 of the s.135 notice of 23 April 2014.
1330 A small proportion of jobs have also been categorised as store only, hours only, or stores plus hours, which we exclude from this analysis on the basis that it is not clear that they are directly relevant for these purposes (given our focus is on charges for a Standard Chargeable Visit, with or without additional hours), and in any event are a very small proportion of the overall dataset (less than \[\times\]% of jobs). Therefore where we refer to the full dataset, this refers to the data supplied excluding these ‘other’ categories.
1331 BT response to question 10 of the s.135 notice of 23 April 2014.
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18.130 However, even within this dataset, BT has stated that there are “anomalies of outlying data in the file which [Ofcom] should take account of when you do your analysis”\(^{1332}\) and suggested there are particular issues with the engineer logged data:

- on-site time is larger than engineer logged time which “results in the hours billed being far lower than expected”. BT has stated that it does not know the reason for this\(^ {1333}\),

- misreporting by engineers as a result of a new job recording application, meaning incorrect data is being inputted (e.g. start or finish times being entered rather than a duration). BT stated that this means that in the dataset considered “a number of jobs (though a small proportion overall)... have hours recorded... that are inflated and incorrect”\(^ {1334}\).

18.131 We do not consider that these potential issues prevent us from drawing conclusions on this issue. In relation to the first point, if the engineer logged time is robust enough for BT’s own billing practices then it is not clear why it should undermine our use of it here (and also means our analysis of billed minutes and worked minutes is theoretically based on the same data source, i.e. engineer logged time, as used by BT, reflecting BT’s actual billing practices as they currently operate). In relation to the second point, we note BT’s concern that the inclusion of this data is likely to result in certain jobs having an inflated duration. As such, their impact would tend to suggest that inferences about the minutes worked by BT on TRCs would be overstated, and so any comparison with the minutes billed would tend to understate any concerns in relation to BT’s billing approach.

18.132 Based on the data we have available, BT does appear to be billing more than the actual time worked by its engineers, which suggests there is a risk of cost over-recovery as a result of its billing approach if hourly prices reflect the hourly cost. We first set out our understanding of the position for Standard Chargeable Visit (‘visit-only’) jobs, before then considering those jobs which also incur additional hours. We then set out how we address this for this review period.

**Analysis of visit-only jobs**

18.133 Visit-only jobs account for the vast majority (approximately [\(\times\)%] of all jobs in the dataset, and include an hour of engineer time.\(^ {1335}\)

18.134 We have estimated the total billed minutes based on the number of visit-only classified jobs multiplied by 60 minutes (as they are billed for a full hour), and compared this to the engineer time actually recorded. This data suggests that in the period considered, total minutes worked were lower than the total minutes billed for these jobs (by approximately [\(\times\)%]). This is equivalent to BT engineers on average

\(^{1332}\) Ibid.

\(^{1333}\) BT response to question 1 of the s.135 notice of 13 May 2014.

\(^{1334}\) BT response to question 10 of the s.135 notice of 23 April 2014. BT has stated that “to avoid this type of misreporting flowing through to customer bills, BT validates its engineers’ time entries before the billing stage, identifying and correcting for errors, and thus mitigating the risk of billing errors” (email from Openreach, 6 May 2014).

\(^{1335}\) As set out above, we have based our analysis of minutes actually worked on the engineer logged time for those jobs classified by BT as visit-only, with the exclusion of jobs where zero was recorded as the duration (this accounted for approximately [\(\times\)%] of the visit-only classified jobs).
working for (and therefore incurring the costs associated with) approximately \( \text{[\text{\textsuperscript{2}}\text{\texttimes}]\text{ minutes}} \) for each visit-only job, while CPs are being charged for a full hour as a result of hourly billing.\(^{1336}\)

18.135 This would suggest that a 17\% reduction to the cost-reflective price of the hour included in the Standard Chargeable Visit would be required in order for the price paid for a visit-only job to equal the average costs incurred in completing that job (i.e. approximately \( \text{[\text{\textsuperscript{2}}\text{\texttimes}]\text{ minutes}} \) of cost).\(^{1337}\)

**Analysis of jobs with additional hours**

18.136 Jobs which incur Additional Hour charges (i.e. engineers work beyond the first hour included in the Standard Chargeable Visit) account for a much smaller (i.e. \( \text{[\text{\textsuperscript{2}}\text{\texttimes}]\%} \)) proportion of jobs in the full dataset.

18.137 We have sought to conduct a similar analysis as for visit-only jobs whereby we compare the actual minutes worked with the minutes billed. However, while the engineer logged time provides the actual minutes worked, the data provided by BT does not record the number of additional hours billed for.\(^{1338}\) Therefore we have had to make assumptions in order to estimate the number of additional hours that have been billed based on the final charges incurred, and have identified three potential approaches.

18.138 The first approach involves considering the final total charge incurred (although this is only available for those jobs which have already been billed, which narrows the dataset\(^{1339}\)). However, the presence of store items for some jobs means additional assumptions are required because BT has only provided the total charge (which includes both hourly charges and store charges, where incurred, together). As a result, to try to get meaningful information from the data available to infer the billed minutes, we have:

- identified those jobs classified by BT as incurring additional hours, excluding those with zero logged duration;

- for each of these jobs, we have deducted the relevant Standard Chargeable Visit rate from the final charge\(^{1340}\), to estimate the charges incurred for additional hours (plus store items where relevant)\(^{1341}\); and

\(^{1336}\) Note, this includes all visit-only data irrespective of whether it has been billed or not, although we note that the inferred average duration is very similar if the dataset is restricted to only those jobs that have actually been billed.

\(^{1337}\) Note, this would only set prices in line with costs incurred on average, as hourly billing still means that on an individual job by job basis, those jobs which are particularly short would be charged a rate in excess of the actual costs incurred while, conversely, longer jobs within the hour would be charged a rate below the actual costs incurred (meaning BT recovers its costs in aggregate).

\(^{1338}\) We note that BT has stated that the bills it sends to customers do itemise additional hours billed (email from Openreach, 6 May 2014).

\(^{1339}\) This is also narrower than for the visit-only analysis, where we included all jobs (and not just those that had been billed) as we were not dependent on the charges incurred in order to conduct the analysis (rather BT’s classifications were sufficient).

\(^{1340}\) The Standard Chargeable Visit Rate is higher for jobs conducted outside of the normal working weekday (9am to 5pm), and at weekends. Therefore we have identified ‘out of hours’ jobs based on the date and time
• we have then assumed that of this charge, full multiples of the current (relevant) Additional Hour rate represent the additional hours charged for, with the remainder being charges for store items. We recognise there is a limitation to this assumption, in that it is quite possible that store items for some jobs may be high and exceed a single multiple of the additional hour. However, our approach would mean that they would be counted as an additional billed hour rather than store items, which could have the effect of overstating the billed hours. Therefore we are mindful of this when interpreting the results alongside the two alternative approaches (which seek to avoid this issue), as discussed below.

18.139 The data analysed in this way suggests that in the period considered, total minutes worked were lower than the total minutes billed for these jobs by approximately \( \% \). This is equivalent to BT engineers on average working for (and therefore incurring the costs associated with) approximately \( \% \) for each additional hour billed, while CPs are being charged for full hour(s) as a result of BT’s hourly billing approach (resulting in, on average, \( \% \) being billed which were not worked). This would therefore suggest that a 29% reduction to the cost-reflective price of an additional hour would be required in order for the price paid for additional hours to equal the average costs incurred in such jobs.

18.140 However, as set out above, we recognise that the assumption around the split of billed charges between additional hours and store items may unduly overstate the additional hours charged (with store charges potentially inappropriately counted as additional hours). Therefore our second approach attempts to avoid this issue by considering the subset of TRC jobs where additional hours are incurred (as classified by BT) which are not identified as including store items (and so should not suffer the same issue around store items, but are a much smaller dataset as a result). Completing the same analysis as set out above for this subset of data (without the adjustments for store items) suggests that in the period considered, total minutes worked were still lower than the total minutes billed for these jobs by approximately \( \% \). This is equivalent to BT engineers on average working for (and therefore

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1341 We only have job completion time and so for simplicity (particularly given the inherent data uncertainties) we have assumed that jobs completed before 9am or after 5pm incur the higher rates. However, we recognise that jobs that span the normal working day and out of hours cut-off could have some hours which incur the higher rates and others which incur the lower rates. We consider that this is unlikely to significantly distort the analysis given that jobs with a completion time of pre-9am or post 5pm on a weekday only represented approximately \( \% \) of the jobs included in the analysis, and the majority (approximately \( \% \)%) of jobs analysed are completed in two additional hours or less, limiting the impact.

1342 Again, we have reflected the relevant hourly rate according to when the job was completed.

1343 For example, if the billed amount was £200 on a normal working day, we would deduct the £120 Standard Chargeable Visit rate which would leave £80 for Additional Hours and store items. Given additional hours on a normal working day are charged at £60, our approach would assume that one additional hour was charged with the remaining £20 attributed to store items.

1344 Note, unlike the visit-only data, this only includes those jobs that have been billed, due to the assumptions required to conduct the analysis.

1345 As with visit-only, applying such a price reduction would only ensure prices reflect incurred costs on average, due to BT’s hourly billing approach. This holds for all additional hour analysis.

1346 Approximately \( \% \)% of the ‘billed’ jobs classified as ‘visit plus additional hours’ do not have store items. However, we do note that not all total charges for jobs classified as not including stores are perfect multiples of the relevant hourly rate, which suggests there may also be issues with this dataset.
incurring the costs associated with) approximately [X%] for each additional hour billed, while CPs are being charged for full hour(s) as a result of BT’s billing approach. This would suggest that a 42% reduction to the cost-reflective price of an additional hour would be required in order for the price paid for additional hours to equal the average costs incurred in such jobs. Therefore, although this is a smaller dataset, it suggests that our approach to store items in the full dataset is not necessarily resulting in a significant overstatement of minutes billed so as to unduly increase the differential between minutes worked and minutes billed (such that the inferred average job duration is artificially suppressed).

18.141 Our final approach attempts to replicate BT’s stated billing approach, whereby we have rounded the engineer logged time up to the nearest hour to provide an indication of how many additional hours may have been billed for each job.\textsuperscript{1347} While this provides a useful additional indication of any potential issue (given it allows use of the full ‘additional hours’ dataset without being distorted by store items), we note that it may still be an inaccurate indication of the hours actually billed given disparities between engineer logged time and billed amounts.\textsuperscript{1348} Completing the analysis on this basis\textsuperscript{1349} suggests that, in the period considered, total minutes worked were still lower than the total minutes billed for these jobs by approximately [X%]. This is equivalent to BT engineers on average working for (and therefore incurring the costs associated with) approximately [X%] for each additional hour billed, while CPs are being charged for full hour(s) as a result of BT’s billing approach. This would suggest that a 19% reduction to the cost-reflective price of an additional hour would be required in order for the price paid for additional hours to equal the average costs incurred in such jobs.

**Implications of analysis for TRC prices**

18.142 In light of the analysis above, we consider it appropriate to make an additional adjustment to the hourly TRC rates to reflect the impact of BT’s current hourly billing approach so that it does not over-recover its costs as a result of working fewer minutes than it bills for. Such an adjustment would reduce this over-recovery risk, while still allowing BT to recover its costs in aggregate.

18.143 However, we consider it appropriate to instead apply a weighted average of the ‘additional hour’ and ‘visit only’ reductions to both sets of charges. This is because the ‘additional hour’ dataset is a much smaller sample than the ‘visit only’ dataset, and as set out above we have had to make a variety of assumptions to analyse this data. As such, applying a weighted average reduces the emphasis on this data. We consider this to be reasonable as it is BT’s overall costs that are important, rather than the price relativities of these components.

\textsuperscript{1347} For example, a job with engineer logged time of 90 minutes would be classified as being billed for one additional hour in our analysis (i.e. 30 minutes were worked outside of the Standard Chargeable Visit, rounded up to the next full hour).

\textsuperscript{1348} For example, for one visit plus additional hours classified job (i.e. no store items were indicated) on a normal working day in the dataset, engineer logged time was two hours but £300 was billed (the charges based on the price list should have been £120 for the Standard Chargeable Visit, plus £60 for the additional hour), and it is not clear why this was the case. Therefore this approach would potentially underestimate the billed hours of such jobs. Note, this example is for illustrative purposes only and is not intended to be representative of BT’s entire dataset.

\textsuperscript{1349} Using the engineer logged time for those jobs classified by BT as incurring additional hours, excluding those with zero logged durations.
18.144 Instead, we have estimated a weighted average reduction, based on the percentage of total jobs in the dataset made up by visit-only jobs (approximately \([\times]\)%) and those with additional hours (approximately \([\times]\)%), to be applied to both the cost reflective hourly charge included in the Standard Chargeable Visit and the Additional Hour charge. This is shown in the table below.

Table 18.6: Weighted average TRC reduction from cost estimate

<table>
<thead>
<tr>
<th>Approach to additional hour analysis</th>
<th>Approach 1: Including all ‘visit+hour’ classified jobs (including those with stores) (-29%)</th>
<th>Approach 2: Excluding jobs with store items (-42%)</th>
<th>Approach 3: Additional hours inferred by rounding up engineer logged time (-19%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weighted average rate reduction</td>
<td>-18%</td>
<td>-19%</td>
<td>-17%</td>
</tr>
</tbody>
</table>

18.145 The weighted average reduction is very similar irrespective of the additional hour analysis used, despite the differences between the estimated duration of an extra hour under Approaches 1 to 3, and we would certainly consider this weighted average to be within the margin of error given the issues with the data set out above. This also provides a degree of comfort about our concerns around the assumptions we have had to make in relation to the additional hours data (such as in relation to store items), as they only have a small impact on this weighted average.

18.146 Therefore, based on the information currently available to us and reflecting BT’s current billing process, a 17-19% reduction could be appropriate and justified. While we note that the misreporting issues raised by BT (as discussed in paragraph 18.130) could have the effect of understating the concerns in relation to BT’s billing, we consider it appropriate to adopt a cautious approach and apply the midpoint of this range (i.e. 18%). This is in recognition of the data used, including the assumptions and judgements we have had to make in light of its limitations across all three approaches.

18.147 This same reduction will be applied to the hourly element of the Standard Chargeable Visit rates and all Additional Hours charges (i.e. irrespective of the time of day), given the out of hours prices are simply multiples of the normal working day rate, and we are not aware of any reasons why we would necessarily expect such jobs to be longer or shorter on average.

Step 3: final TRC price changes

18.148 In order to calculate the final TRC rates, we have first applied the 12.3% price reduction to each of the existing price points to bring the rates more into line with costs.

18.149 We have then applied the additional 18% price reduction to the following, to reflect the impact of BT’s hourly billing approach:

\[ We\ have\ set\ out\ the\ weighted\ average\ using\ the\ 17%\ reduction\ implied\ by\ the\ visit-only\ data\ (weighted\ by\ \([\times]\)%)\ and\ the\ three\ alternative\ approaches\ for\ the\ ‘additional\ hour’\ analysis\ (weighted\ by\ \([\times]\)%). \]
• the hourly element of the Standard Chargeable Visit\textsuperscript{1351}, and
• Additional Hours prices.

18.150 This results in a range of different final (total) percentage price reductions across the services, as set out in brackets in Table 18.7 below. This table also shows the final set of TRC rates (rounded to the nearest penny), which will come into force on 1 July 2014.

Table 18.7: Final charge control for TRCs – starting prices as at 1 July 2013 (percentage change from 2013/14 prices shown in brackets)

<table>
<thead>
<tr>
<th>TRC name</th>
<th>Normal working day</th>
<th>All other times except Sundays &amp; Public/Bank Holidays</th>
<th>Sundays and Public/Bank Holidays</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Chargeable Visit (Visit plus up to 1 hours work)</td>
<td>£95.73 (-20%)</td>
<td>£117.30 (-22%)</td>
<td>£138.86 (-23%)</td>
</tr>
<tr>
<td>Additional Hours (or Part thereof)</td>
<td>£43.13 (-28%)</td>
<td>£64.70 (-28%)</td>
<td>£86.26 (-28%)</td>
</tr>
<tr>
<td>Supplementary charges (Per Visit)</td>
<td>N/A</td>
<td>£26.30 (-12%)</td>
<td>£52.60 (-12%)</td>
</tr>
<tr>
<td>Supplementary charges (Per Hour or Part thereof)</td>
<td>N/A</td>
<td>£26.30 (-12%)</td>
<td>£52.60 (-12%)</td>
</tr>
</tbody>
</table>

Other considerations

18.151 Here, we consider the following issues:

• glide-path or on-off adjustment;
• interaction with volumes; and
• potential changes to service design.

Glide-path or on-off adjustment

18.152 We normally have a preference for ‘glide paths’\textsuperscript{1352} rather than one-off adjustments (particularly where the charge controls replace similar existing controls). Glide paths involve setting the control so that there is a gradual convergence of prices from the current level to the target level by the end of the charge control period. We generally have a preference for a glide path for two reasons – to provide stronger cost reduction (i.e. productive efficiency) incentives by allowing the firm to retain the

\textsuperscript{1351} The visit element of the Standard Chargeable Visit rate will still only be subject to the initial 12.3% reduction. We note that based on the current price list, the visit element appears to be the same (currently £60) irrespective of when the work is carried out (i.e. the Standard Chargeable Visit rate minus the Additional Hour charge is always £60). Therefore we maintain this when applying the charge reductions to the different elements (i.e. the visit element remains the same irrespective of when the job is carried out).

\textsuperscript{1352} See Section 6 of Volume 2 for a full discussion of our general position on glide paths.
benefits of cost reductions made under a previous charge control for longer, and to promote a stable and predictable regulatory regime (against which investment and other decisions may be taken).

18.153 However, we do not consider there to be sufficiently strong reasons to justify such an approach here and so intend to make this one-off change at the start of the control period (rather than set a glide path). This is in order to immediately reduce the consumer harm from prices in excess of cost, particularly because it does not seem that BT’s high margin is necessarily the result of previous efficiency gains (given the issues with its cost data and recent price increases, discussed in paragraphs 18.81 to 18.87) and these services were not previously subject to a charge control.

Further, we consider the disruption of this one-off change (e.g. to regulatory stability or investment incentives) is likely to be limited given the comparatively low revenue from TRCs (compared to, for example, WLA as a whole) relative to the benefits of reducing prices. For these reasons we consider a one-off adjustment to TRCs to be appropriate and consider this to be consistent with our approach in the LLU and WLR (WFAEL) charge controls, and with our approach elsewhere. We note that EE, Sky and TalkTalk also agreed with a one-off starting charge adjustment, as set out above, and that BT itself did not argue that a glide path was necessary or appropriate in its response to the January 2014 FAMR Consultation in relation to our potential price reduction range (albeit that the base case was lower in that consultation than is currently being imposed for TRCs).

Interaction with volumes

18.154 We have not set our charge control by reference to volumes given the uncertainty and variability in the volume data provided by BT (as discussed above). Moreover, for services where a large part of the cost base relates to engineering costs, the LRIC:FAC ratio tends to be close to 1. This suggests that TRCs do not benefit from significant economies of scale, and so we consider that the costs are unlikely to

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1353 I.e. a firm’s incentives to innovate/reduce costs during a charge control will be dampened if we claw back its gains from doing so straight away in the next review period.

1354 This is consistent with where we have previously considered one-off reductions under certain circumstances, see for example paragraph 3.96 of Ofcom, Charge control review for LLU and WLR services – consultation, 31 March 2011, http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/summary/wlr-cc-2011.pdf. We also noted the potential differences between a charge control and a non-charge control environment in considering one-off adjustments (and associated incentives) in relation to leased lines. See for example paragraph 3.132 to 3.136 of Leased Lines Charge Control – A new charge control framework for wholesale traditional interface and alternative interface products and services, 8 December 2008, http://stakeholders.ofcom.org.uk/binaries/consultations/llcc/summary/leasedlines.pdf.

1355 Including, for example, our approach to Caller Display, where we are also implementing a one-off reduction, as discussed in Section 4 of Volume 2.

1356 Such as, for example, ECCs where we made a one-off adjustment largely on the basis that the high margins observed were not as a result of efficiency gains. See Section 22 of Ofcom, Business Connectivity Market Review - final statement, 28 March 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity/statement/Sections17-24.pdf.

1357 See, for example, in relation to MPF and SMPF single migrations, where a large part of the costs relate to engineer time and the LRIC:FAC ratios were approximately 97% in 2011/12. See P.55, BT, Current cost financial statements for 2012 including Openreach undertakings, www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2012/RFS_2012.pdf.
significantly vary as a result of volume changes. Therefore we consider our charge control to be appropriate even in the event of volume changes.

Potential changes to current services

18.155 We acknowledge that the above analysis is based on a static view of BT’s current billing practices. If BT were to change its processes, this could mean that our approach is no longer appropriate. Similarly, we note [X] concerns that BT could introduce new TRC services and/or re-design services to circumvent this charge control.

18.156 The legal condition for the charge control provides that:

“Where…the Dominant Provider makes a material change…to any Charge Controlled Service for which a Charge is charged…[the charge control] shall have effect subject to such reasonable adjustment to take account of the change as OFCOM may direct to be appropriate in the circumstances. For the purposes of this condition…a material change to the Charge Controlled Service includes (but is not limited to) the introduction of a new product and/or service wholly or substantially in substitution for that existing Charge Controlled Service or a change as to the billing practice for the Charge Controlled Service”.

18.157 This provision gives Ofcom a power of direction in circumstances where BT has introduced new products or made other material adjustments (including as to its billing practice) which might have a material change on the charge control.

18.158 In addition, if CPs are still concerned (particularly later in the review period) that BT’s hourly billing approach is causing overcharging issues, we consider that there are alternative ways in which this could be addressed. For example, reducing the billing increments from one hour (to, say, 15 minutes) could reduce this concern as the effect of rounding up by BT to the next increment would be much smaller. We understand that there may be other issues around certainty and consumer billing that might affect whether this is desirable and therefore we consider that industry is best placed to decide whether to take this forward through the SoR process. However, we note that were BT to move to smaller billing increments it is likely we would need to reconsider the appropriate hourly rate equivalent. This is because the TRC hourly rate imposed in the charge control specified in this decision has already been adjusted downwards in order to seek to reduce the impact of BT’s hourly billing approach and so using this rate to inform smaller billing increments could undermine cost recovery by BT. Instead, if this occurred we consider that the TRC hourly cost estimate would likely be the relevant benchmark for the purposes of setting the price for smaller billing increments, and we would need to use our direction making power to give this effect.

Other TRC services

Internal Network Termination Equipment shifts and external shifts or rearrangement of line-plant from distribution point

18.159 We note that aside from the charges set out above, Openreach’s price list includes specific prices for internal NTE shifts and external shifts or rearrangement of line-plant from the distribution point. We understand from BT that these prices are for
copper lines and cover internal shifts of the master socket and external shift of a
dropwire from a pole to the property. BT stated that these prices are directly linked to
the TRC rates, but are fixed (e.g. a standalone NTE shift will be priced at £120
whether it takes one or three hours to complete).\footnote{1358} Indeed, we note the charges for
these services are equivalent to the Standard Chargeable Visit and Additional Hours
prices.

18.160 To the extent these services fall within the network access requirement, we would
expect these prices to follow the same charge reductions as we are imposing for the
hourly TRC charges, given the link between the two types of service (i.e. BT itself has
stated that the charges are directly linked to the TRC rates). Therefore we also
reduce the charges for these services by the cost reflective adjustment (12.3%), for
the reasons set out above. We do not currently consider an additional adjustment is
required to reflect the rounding issue (as per TRCs), as these items are already
charged on a ‘per job’ basis and as such are already likely to reflect variations in
average duration (e.g. as set out above, the fee is fixed irrespective of how long it
takes). Further, we note that no stakeholders queried the proposed approach for
these services in response to the consultation. The final set of prices for these
services is as set out in Table 18.8.

Table 18.8: Final charge controls for Internal Network Termination Equipment shifts
and external shifts or rearrangement of line-plant from distribution point

<table>
<thead>
<tr>
<th>TRC name</th>
<th>Per order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal and External Shifts</td>
<td>£105.20</td>
</tr>
<tr>
<td>Additional Line shifted</td>
<td>£52.60</td>
</tr>
</tbody>
</table>

Store items

18.161 BT also charges separately for store items used when supplying a TRC service (e.g.
broadband micro filters). Where such store items are supplied as part of a TRC
supplied by BT pursuant to the network access obligation, we would also consider
these items to be ‘reasonably necessary’ for the supply of services based on LLU and
WLR. Given this, we consider that the same risk of excessive pricing arises.
However, we note that store items represent a small proportion (less than \textbf{\%} of
total TRC revenues, and any regulatory intervention to protect consumers from
excessive pricing needs to be proportionate. This is particularly true given it is not
clear how the underlying costs of these items are likely to vary.

18.162 In light of this, and to provide a safeguard against excessive prices, we consider that
it is sufficient for the fair and reasonable charges condition\footnote{1360} to apply to store items
supplied as part of a TRC service supplied by BT pursuant to the network access
obligation.

\footnote{1358} BT response to question 8 of the s.135 notice of 23 April 2014.
\footnote{1359} BT response to question 1 of the s.135 notice of 22 November 2013.
\footnote{1360} We are imposing a Requirement to provide network access on reasonable request in both the WLA and
WFAEL markets. The relevant Condition requires that charges are fair and reasonable where no charge control
or Basis of charges obligation applies.
Charge control for SFIs

18.163 We now discuss the appropriate charge control approach for SFIs. We first consider the current financial performance for SFIs, considering RFS data, before then setting out our analysis, which includes:

- charge control design for SFI services (including estimating average module durations); and

- other considerations, including interactions with volumes, potential changes to SFI services, and alignment of MPF and SMPF SFI charges.

Current financial performance

18.164 As discussed above, we have concerns about the reliability of BT’s aggregate financial data on SFI costs, revenues and volumes. Accordingly, we have only used this information to provide an indicative view of costs relative to revenue. Unlike the case with TRCs, based on the comparable data we have available BT’s revenues do not appear to be significantly out of line with FAC for SFIs (in 2012/13 total FAC was £[X] and total revenues were £[Y]).

18.165 While the limited data we have available appears to suggest total revenues were not significantly in excess of total FAC for SFIs in 2012/13, SFI charges have changed since 2012/13. Given some modules have increased in price and others have decreased, the net effect of the latest price changes on total revenue/cost recovery is uncertain. Although we note BT stated that this change would better align the SFI prices with costs, its expectations of this change was to increase revenue (by up to £[Z]) in 2013/14 and the EBIT margin achieved (from [%] to [%]). We also note that, on a module basis, it is not clear that individual price changes have necessarily been driven by a change in underlying module-specific costs, as BT stated [%].

Charge control analysis for SFI services

Specification of the SFI charge control

18.166 While it is less clear that revenues are currently substantially above costs in relation to SFIs, what is clear is that there is a definite link between TRCs and SFIs, both in terms of inputs (i.e. both are predominantly labour-based) and, historically, in the pricing of the two by BT. In particular, given the main input into an SFI module appears to be engineering resource, a key driver in SFI module costs would appear to be the time taken for each module to be completed. Indeed, we note that pricing papers from BT suggest [%]. Therefore, engineer time is a key component of the

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1361 Using the 2011/12 cost allocation methodology. BT response to question 5(c) of the s.135 notice of 25 October 2013, updated in the letter from BT of 4 March 2014. As with TRCs, it appears that in previous years, including 2011/12, FAC was in excess of revenues (£[X] and £[Y] respectively in 2011/12), however we consider that this is of limited importance given BT was free to set prices as it saw fit (subject to its cost orientation obligation) – rather, the key issue for us is whether current prices are likely to be cost reflective.

1362 Internal pricing review paper, BT response to question 2 of the s.135 notice of 13 December 2013.

1363 Ibid.

1364 Internal pricing review paper, BT response to question 2 of the s.135 notice of 13 December 2013.
costs for SFI modules, and in this regard BT confirmed that its calculation of the labour rate for SFIs is in line with its calculation of the direct labour cost for TRCs.\footnote{BT response to question 14 of the s.135 notice of 22 November 2013.}

18.167 Further, BT appears to consider pricing for SFIs and TRCs together under the umbrella of ‘field force products’, which are priced using a combination of a visit component and an hourly rate.\footnote{Internal pricing review paper, BT response to question 2 of the s.135 notice of 13 December 2013.} Indeed, BT previously explicitly linked the two sets of charges (i.e. SFI charges were based on (and directly linked to) the TRC hourly and visit charges according to the typical time required to complete the respective module\footnote{E.g. an SFI module which took 0.5 hours to complete was previously charged at half the ‘Additional Hour’ TRC rate on a normal working day. BT, Special Fault Investigation 2 (SFI2) presentation to Ofcom, 15 December 2011.}, and in recent reviews of prices in February and December 2012 BT explicitly considered maintaining this link. It has since modified its approach to instead set what are in BT’s view “market based prices which reflect the increase in costs but do not directly mirror the TRC hour and visit rates”.\footnote{Internal pricing review paper, BT response to question 2 of the s.135 notice of 13 December 2013.} However, rather than appearing to be due to a breakdown of this relationship between TRCs and SFIs, part of the rationale for this modification was concerns about \footnote{This is because we do not consider that SFIs suffer from the same rounding issue. In the calculation of the prices under our charge control, we use the average actual duration of SFI jobs.}.

18.168 Therefore, we consider that the charges for SFIs should be aligned with the underlying hourly TRC cost estimates for 2014/15 (pre-adjustment for the rounding issue\footnote{As discussed above, the TRC visit component is equal to the Standard Chargeable Visit charge minus the Additional Hour charge on a normal working day before the rounding adjustment.}). We note that no stakeholders disagreed with this approach in response to the consultation. Specifically, we consider that SFI prices should be made up of the following components:

- **SFI visit component charge (£52.60)** – only incurred where a visit charge is included in the module, and will be equal to the visit charge element in the TRC Standard Chargeable Visit on a normal working day\footnote{Note, we would expect the average module duration used in this calculation to reflect “on-site” engineering time to complete the module itself rather than also include travel, given the latter is already reflected in the SFI visit component charge (as is the case with TRCs, where the visit component of a Standard Chargeable Visit includes travel costs and half an hour of the engineer’s time (Internal pricing review paper, BT response to question 2 of the s.135 notice of 13 December 2013)).}; and/or
- **SFI hourly component charge (£52.60)** – which is equal to the hourly TRC cost estimate on a normal working day, before the additional adjustment for the rounding issue.

18.169 As such, module charges should equal the SFI hourly component charge multiplied by the average duration to complete each module\footnote{We continue to consider that this approach will help ensure that SFIs falling within the network access requirement are charged at levels which reflect the underlying costs of provision, and will do so better than applying the same percentage reduction as} (rounded to the nearest penny). Where the module includes a visit element, the SFI visit component charge will be added to the module price.

18.170 We continue to consider that this approach will help ensure that SFIs falling within the network access requirement are charged at levels which reflect the underlying costs of provision, and will do so better than applying the same percentage reduction as
applied to TRCs to each SFI module as argued by TalkTalk. We note that Sky agreed with this approach in its consultation response (as discussed above).

18.171 While we are setting the maximum hourly (and visit) rate in an SFI module, BT will have discretion over the average module duration that ultimately informs the module price. TalkTalk strongly disagreed with our proposal in the January 2014 FAMR Consultation as it considered it gave BT a clear opportunity to game the system by exaggerating the time taken for each SFI, and both Sky and TalkTalk raised concerns about BT being able to revise its average module durations during the review period and the negative efficiency incentives this could create (as summarised above). Relating to this, BT has stated a preference to estimating average module durations only once, at the start of the control.\(^{1373}\)

18.172 As a result, BT will be required to ensure its SFI module prices on 1 July 2014 reflect its best estimate of average module durations and the SFI hourly component charge (with or without the SFI visit component charge, as discussed above), but will not be permitted to make subsequent revisions to the module duration during the review period.\(^{1374}\) This is to incentivise efficiencies in reduced task times during the charge control period (as this would have no downward impact on the charges, and so BT would keep any gains over the period). We accept this still potentially gives BT a high degree of flexibility over starting SFI prices (as it is ultimately in control of its average module duration estimates and so could overstate the time taken to complete a module) and so we proposed in the consultation to maintain the requirement for fair and reasonable charges on SFIs to protect against this (e.g. we would expect BT, if required, to be able to justify its duration estimates used in the starting SFI price calculations). However, rather than extend the fair and reasonable charges obligation to achieve this, we have instead incorporated it into the SMP condition for SFIs, such that the amount of time determined by BT as being required by an engineer in order to complete the corresponding module (used to calculate the SFI prices) must be fair and reasonable. We consider that this provides protection from BT unduly overstating SFI module durations so as to increase the module prices. Further, the legal conditions provide Ofcom with a power of direction to determine the average module duration for the purposes of the SFI charge control.

**Estimating average module durations**

18.173 We note that BT has indicated its intentions to use 2013/14 SFI data to determine the average module duration. This data (and BT’s interpretation of it) has not been made available in sufficient time to enable us to undertake a detailed analysis. Therefore in the absence of this information we are unable to comment on the methodology adopted by BT for the purposes of SFI2 module prices for this Statement.

18.174 However, BT previously submitted SFI module data from 2012/13\(^{1375}\), and so we make the following observations around potential duration estimates based on this in order to provide an indication of how (at a high level) we might expect BT to approach this task.

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\(^{1373}\) Information received 7 March 2014.

\(^{1374}\) Note, while BT will be unable to adjust the module duration used to set the SFI modules prices during the review period, it will be able to adjust those starting prices in line with our indexation of the SFI hourly component charge and SFI visit component charge as discussed in paragraph 18.181 onwards.

\(^{1375}\) BT follow up response to the s.135 notice of 13 December 2013, received 29 January 2014.
18.175 **Symmetric treatment of outliers:** Across the dataset, there appear to be outliers. BT itself stated that in deriving the module durations, it would need to "remove bias caused by incorrect use of task time recording", and would do so by removing outlying data points.\(^\text{1376}\) We agree that BT needs to consider such data occurrences and ensure the module durations are not skewed by this. For example, as with TRCs (see paragraph 18.129 above), we accept that zero module durations may be errors rather than genuine reflections of actual task times.\(^\text{1377}\) Similarly, some modules could be unusually long, and unrepresentative of an average SFI module duration, and as such their inclusion in the module duration estimates could unduly skew the average duration upwards.\(^\text{1378}\) Therefore we would expect any bounding of the dataset to reflect real-life considerations, and in particular, not to do so in a one-sided way whereby those jobs which would tend to increase the average duration (and therefore charge) are retained while those which reduce the average are excluded (unless objectively justified).

18.176 **Real-world ‘sense check’ of numbers:** We note there are some complexities in estimating average module durations due to way that BT records jobs, in that, rather than recording each module duration, it records a single duration for a complete job and the specific modules that the engineer states it has completed within that time. As such, our understanding is that the duration of non-Base modules would need to be estimated based on (and therefore directly affected by) the Base module duration being deducted from the total duration of a multi-module job. Therefore the Base module duration estimate would have a direct impact on the estimates of other modules. We note that over time, based on the information we have available, the Base module duration has both increased and decreased. It is not clear to us why this has been the case\(^\text{1379}\) and so rather than take the 2013/14 data outcomes as given, we would anticipate that BT should also qualitatively assess module duration estimates in order to determine whether they are reasonable or otherwise. Similarly, other module durations have also moved during this time, but the most recent increase in Base module duration appears to have been combined with the duration of other modules decreasing. Indeed based on the 2012/13 data, the average duration for the internal equipment module could potentially be \[\text{[x]}\].\(^\text{1380}\) We consider

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\(^\text{1376}\) Information received 7 March 2014.

\(^\text{1377}\) However, it is not clear to us that low durations in excess of zero are necessarily representative of "incorrect use of task time recording", as some modules could legitimately be quite short (for example, if a broadband router is simply not plugged in). Therefore, while we note that BT’s suggestion is to remove jobs from the dataset with a task time of 10 minutes or less, we would expect BT to ensure that this is appropriate (and not just a reflection of short jobs), so as not to unduly skew the average duration upwards by their exclusion.

\(^\text{1378}\) We note that BT has suggested excluding jobs with a task time in excess of six hours (information received 7 March 2014), however we would expect that any upper bound in the dataset would be based upon a reasonable reflection of the job entailed. For example, the SFI2 Base module is described as more investigative/diagnostic (involving the engineer visiting the end-user property to undertake an initial assessment of the cause of the broadband speed problems, as described in Table 4 of Openreach’s January 2014 FAMR Consultation response), and so any data excluded should reflect the nature of the module rather than a more arbitrary cut-off. Alternatively, if this is particularly complex given the variety between jobs, a more statistically robust alternative might be to exclude an upper decile or quartile of data, for example, rather than base the cut-off on a specific hour. However it is done, it is important that BT considers how to reflect (or discount) the outliers in its module duration estimates, particularly given the interactions between the module durations discussed further below.

\(^\text{1379}\) For example, BT was unable to provide the rationale for the SFI module duration changes (or explain the calculations or sampling methodology) set out in its December 2012 paper reviewing SFI pricing. BT response to question 3 of the s.135 notice of 23 April 2014.

\(^\text{1380}\) \([x]\) BT response to question 3 of the s.135 notice of 13 December 2013.
that this emphasises the need for a qualitative ‘sense check’ of any module duration estimates.

18.177 In any event, we would expect BT to be able to justify its average module durations used to calculate the starting SFI prices, particularly in the event charges as at 1 July 2014 represented an increase from current levels.

Other considerations

18.178 As with TRCs, we have not set out our charge control with reference to volumes, but we consider the same arguments in relation to economies of scale apply as with TRCs (see paragraph 18.154) given labour is also a significant proportion of the costs of SFIs. As such, we consider our charge control to be reasonable, even in the event of volume changes.

18.179 For the same reason as with TRCs (see paragraph 18.155), the charge control legal condition provides a power of direction in circumstances where BT introduces new products or made other material adjustments which have a material change on the SFI charge control. We consider that this will reduce any impact of the risk of gaming by BT in relation to the introduction of new SFI services identified by \[\ldots\], and will also provide some protection if BT adjusts its existing SFI2 modules (as it did when these replaced the previous SFI regime) or introduces alternative modules, where these are reasonably necessary.

18.180 Finally, in the July 2013 LLU WLR Consultation we proposed to align the charges for SMPF and MPF SFIs (this was for the same reasons as set out in the 2012 LLU WLR Statement\(^\text{1381}\)). We note that in their respective consultation responses, both Openreach\(^\text{1382}\) and Virgin\(^\text{1383}\) were in favour of this proposal, with the former noting that the underlying costs of the service will be the same for MPF as they are for SMPF SFI services. We remain of the view that SFI charges should be aligned between MPF and SMPF, as it seems likely that the underlying costs will be similar for MPF and SMPF SFI services. This is because the cost of SFI work is largely driven by labour engineering time, and we consider that the time spent investigating and remedying the source of broadband problems is likely to be broadly similar between MPF and SMPF services.

Additional issues relevant for both charge controls

Indexation

18.181 Having set charges for TRCs and SFIs at the start of the charge control period, we have considered whether (and, if so, how) they should be adjusted during the review period (i.e. how they should be indexed).

18.182 We do not consider that it is proportionate to seek to forecast in detail how the SFI and TRC costs will change over the review period. Given the data uncertainty and


\[^{1382}\text{See paragraphs 333-335, Openreach response to the July 2013 LLU WLR Consultation, }\text{http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Openreach.pdf.}\]

\[^{1383}\text{See p.13, Virgin response to the July 2013 LLU WLR Consultation, }\text{http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Virgin_Media.pdf.}\]
extent to which we have exercised judgement in setting the 2014/15 charge controls, detailed forecasting of SFI and TRC costs is unlikely to significantly improve the accuracy of our charge controls. Rather, we adopt a simpler approach which is consistent with our LLU and WLR (WFAEL) charge control.\(^{1384}\)

18.183 We note that labour costs form a significant proportion of both TRC and SFI costs (approximately \(\frac{3}{5}\) based on our bottom-up hourly cost estimate). We would typically expect these costs to increase over time in line with general wage inflation, as reflected in our LLU and WLR (WFAEL) charge controls.\(^{1385}\) Therefore we consider it appropriate to allow charges for TRCs and SFIs to increase to reflect this likely cost inflation, and to do so in a way consistent with the LLU and WLR (WFAEL) charge controls. However, we accept that not all costs are labour-based and so we consider that this wage inflation rate should only be applied to the labour elements, and that we should apply an alternative indexation to the other cost elements (incorporating efficiency parameters as per the LLU and WLR (WFAEL) charge controls).

18.184 We note that approximately \(\frac{3}{5}\) of our estimate of TRC costs are labour based, while \(\frac{2}{5}\) are not and so could potentially be subject to an annual efficiency factor. Therefore we consider it appropriate to apply the estimated annual wage inflation rate to the former (i.e. \(\frac{3}{5}\) of costs), and the annual LLU and WLR (WFAEL) charge controls efficiency factor to the latter (i.e. the remaining \(\frac{2}{5}\) of costs).

18.185 We acknowledge TalkTalk’s alternative suggestion for indexation (as summarised in paragraph 18.19) to reflect the potential for labour efficiency gains. However, we do not consider this to be appropriate as some TRCs are charged on an hourly basis (and our charge control is informed by hourly cost estimates), and so it is not clear that significant hourly labour cost savings could be achieved (we also note in this regard BT’s challenges to the potential efficiencies raised by TalkTalk, as discussed in paragraph 18.19).\(^{1386}\) In particular, we do not consider that hourly labour costs could plausibly reduce by 5% per year as per the efficiency parameter (and it would be inconsistent with the LLU and WLR (WFAEL) charge controls assuming they could, given they expect labour costs to increase by 2.8%). As such, our simplified approach to indexation allows us to reflect efficiencies where we consider they could be made, while still doing so in a way which is consistent with the LLU and WLR (WFAEL) charge controls and without needing to make a judgement about the division of efficiency gains between reduced task time and reduced hourly costs.

18.186 Similarly, we do not consider TalkTalk’s suggestion appropriate in relation to SFIs as it is not clear to us that it is plausible that SFI labour costs could reduce by 5% per year. First, it is an hourly cost estimate which is to be used to calculate SFI module prices, and for the same reasons as discussed in relation to TRCs, we do not

\(^{1384}\) Indeed, rather than conduct detailed forecasting to establish the efficient cost (and therefore price) level at the end of the review period for TRCs and SFIs in order to set this charge control (as per the LLU and WLR (WFAEL) charge control), we have imposed a price reduction based on our estimate of current costs. As a result, we proposed a simple fixed indexation for TRCs and SFIs in the January 2014 FAMR Consultation according to how costs might be expected to change each year from this initial cost estimate, rather than set it in relation to CPI (i.e. CPI+/-X) in order to achieve a specific final price point at the end of the review period. No respondents to the consultation disagreed with the fixed indexation approach proposed, or suggested that it should be set in reference to CPI instead.

\(^{1385}\) As discussed in Section 5 of Volume 2.

\(^{1386}\) Where TalkTalk allows for this in its proposal, its proposed index for services charged on an hourly basis (+0%) is not significantly different to our own proposal.
consider that hourly labour costs could plausibly reduce by 5% per year. We also note that TalkTalk has not presented strong evidence to suggest such a reduction would be possible. Applying the 5% efficiency factor to labour costs for SFIs would therefore effectively require 5% in time savings (i.e. reduced module durations) per year, and we do not have any evidence that this is feasible (and in any event we note that the efficiency incentives for reduced module durations can also occur with a one-off setting of the charges, as discussed above, without needing to make an adjustment to the index). We also consider it appropriate to maintain consistency in the indexation approach for TRCs and SFIs, given the comparability of inputs.

18.187 Therefore, we continue to consider it appropriate to index the TRC and SFI charges by a combination of the wage inflation rate and efficiency assumption used in the WLR and LLU charge control, weighted according to the relative proportion of labour and non-labour costs respectively (as described above). This is in recognition of the fact that not all TRC and SFI costs are labour-based. Therefore, using the 2.8% labour wage inflation alongside the final efficiency factor of 5% used in the LLU and WLR (WFAEL) charge controls, the TRC and SFI charge controls will be indexed by +0.2% per year. In other words, prices can increase by up to 0.2% per annum.1387

18.188 This index is applied to each TRC charge and each SFI charge component. We usually have a preference for a basket approach as it is often desirable for BT to have some pricing flexibility over individual service/product prices. However, in order to demonstrate compliance with an overall basket, BT would need to provide volume or revenue weightings and it has indicated that this is difficult for both TRCs and SFIs. This would make it difficult for BT to demonstrate compliance in the event it varied individual charges by differing amounts. As a result, we apply the indexation to each and every TRC charge and each SFI charge component. We also note that although BT did not comment on the approach to indexation in response to the January 2014 FAMR Consultation, it envisaged its previous safeguard cap proposal applying to every TRC and SFI charge in the price list, on the basis of simplicity and the potential difficulty of demonstrating compliance under a more elaborate framework.1388 Sky also supported applying the indexation to each and every charge. Therefore each TRC and SFI charge can increase by up to the index per year.

Incentives for service provision and quality

18.189 As set out above (see paragraph 18.14), BT argued that removing all margin above FAC (by using a FAC-based pricing approach) will undermine its incentives to provide the services/provide them at a suitable quality, as well as innovate in their provision. However, we consider that our charge control approach does not undermine these incentives for a variety of reasons.

18.190 Firstly, BT is ultimately obligated to provide TRCs and SFIs to the extent they are within scope of the network access requirement and this obligation arises as a result

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1387 We note that Sky has argued that the pay inflation assumption of 2.8% is too high and the proposed efficiency rate of 5% is too modest. However, these concerns are discussed as part of the LLU and WLR (WFAEL) charge control, and we take those assumptions for the indexation of TRCs and SFIs for consistency reasons.

1388 Informal information submission from BT, 22 November 2013.
of its SMP in the fixed access markets under review. Cessation of supply of these services is not an option for BT.\textsuperscript{1389}

18.191 Secondly, as set out above, our charge control basis still means the price of TRCs and SFIs includes a contribution to common costs (including a return on any capital employed in their provision) as well as incremental costs. Therefore BT is not indifferent between whether it provides TRCs and SFIs or not, as it forgoes more than just marginal costs for each unit lost (as discussed above).

18.192 Thirdly, setting charges at the start of the review period means BT is able to earn and keep a return in excess of that observed at the start of the control, if it can reduce its costs. Therefore this should maintain incentives to improve the procedures and technical methods used, particularly to the extent they reduce hourly TRC and SFI costs (i.e. efficiency gains).

18.193 Finally, we also note that the link between BT’s proposal for TRCs and quality/innovation is less clear than it presented (summarised in paragraph 18.14). This is because rather than incentivising improved quality/innovation, maintaining the existing high margin could equally negatively distort BT’s incentives by incentivising it to treat TRCs like a ‘cash cow’ and encourage over-provision at the expense of other engineering work which attracts a lower return (e.g. increased job duration for TRCs since these are charged by the hour). As such, it could also dampen efficiency incentives. Therefore it is not clear that an additional margin in excess of FAC would be an appropriate way to ensure service provision and sufficient quality. We also note that it is not clear why BT would automatically expect a greater margin where it considers it faces competition (as implied by its alternative proposals summarised in paragraph 18.14) given we would typically expect competitive pressure to constrain prices.

18.194 For these reasons we do not consider it appropriate or necessary to include an additional margin (blended or otherwise) as argued by BT, nor do we consider our approach will undermine the incentives for service provision and/or improved service quality. Therefore we disagree with BT’s view that our charge control basis is disproportionate. We also do not consider that it will necessarily undermine incentives to innovate for complementary services as, to the extent they are not reasonably necessary for the provision of LLU- or WLR-based services, they are not covered by this regulation and as such could be charged for separately if there is a value to the CP. For example, it is not obvious that BT’s example of the installation of set-top boxes as an additional on-site service\textsuperscript{1390} would necessarily fall under the ‘reasonably necessary’ criteria for LLU or WLR services. Moreover, we consider that our charge control will also remove the incentives for BT to change its services in ways that simply increase the costs of provision without meeting a specific demand from its customers (i.e. CPs), which might otherwise occur (particularly under a Basis of charges obligation).

\textsuperscript{1389} This pricing regulation will not apply to those TRCs or SFIs which are not within scope of the network access requirement.

\textsuperscript{1390} Paragraph 378, BT response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.
Final charge controls

18.195 In light of the above, we impose a charge control for TRCs which fall within the network access requirement, with 2014/15 charges (implemented 1 July 2014) as follows:

Table 18.9: Final charge control for TRCs

<table>
<thead>
<tr>
<th>TRC product</th>
<th>Normal working day</th>
<th>All other times except Sundays and Public / Bank Holidays</th>
<th>Sundays and Public/ Bank Holidays</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Chargeable Visit (Visit plus up to 1 hours work)</td>
<td>£120.00</td>
<td>£95.73</td>
<td>£150.00</td>
</tr>
<tr>
<td>Additional Hours (or Part thereof)</td>
<td>£60</td>
<td>£43.13</td>
<td>£90.00</td>
</tr>
<tr>
<td>Supplementary charges (Per Visit)</td>
<td>N/A</td>
<td>N/A</td>
<td>£30.00</td>
</tr>
<tr>
<td>Supplementary charges (Per Hour or Part thereof)</td>
<td>N/A</td>
<td>N/A</td>
<td>£30.00</td>
</tr>
</tbody>
</table>

All prices rounded to the nearest penny

18.196 Each of these charges will subsequently be indexed by +0.2% per year.

18.197 We also impose a charge control for SFIs which are within the scope of network access requirement which explicitly links these charges to the TRC charge control as follows.

18.198 For a module which includes engineer time and a visit charge (e.g. Base module and Frame Direct module), prices at 1 July 2014 should equal:

a) the SFI visit component charge; plus

b) the additional engineering time charge, calculated by the typical time required to complete the module (allowing for any engineering time already included in the visit component charge) multiplied by the SFI hourly component charge;

c) this total should then be rounded to the nearest penny.
18.199 For all other modules which do not recoup the visit charge, prices should equal the typical time required to complete the module multiplied by the SFI hourly component charge, rounded to the nearest penny.

18.200 The visit and hourly charge components for each SFI module are set out in Table 18.10 below, and will be indexed by +0.2% per year.

Table 18.10: Visit and hourly cost components for each SFI module in 2014/15

<table>
<thead>
<tr>
<th></th>
<th>£</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFI visit component</td>
<td>52.60</td>
</tr>
<tr>
<td>SFI hourly component (per hour)</td>
<td>52.60</td>
</tr>
</tbody>
</table>

Cost accounting for TRCs and SFIs

18.201 We have today published a statement on Regulatory Financial Reporting\(^{1391}\), which set out our considerations (in light of stakeholder responses to our proposals) and conclusions on the policy changes to BT’s regulatory financial reporting framework, and also our reasoning in relation to the specific form of the SMP conditions we are imposing on BT. We describe here our policy as to what we expect to include in the cost accounting Direction for TRC and SFI charge controlled services at a service level.\(^{1392}\)

18.202 We require information necessary to monitor the effectiveness of the charge controls for TRCs and SFIs, to ensure that they continue to address the competition problems identified, and to enable our timely and effective intervention should intervention ultimately be necessary. Further, it is important that BT records information necessary for the purposes of monitoring TRC and SFI charge controls at the time that relevant transactions occur, on an on-going basis.

18.203 In the January 2014 FAMR Consultation we asked whether Stakeholders agreed with our cost accounting proposals and provided pro formas setting out what the required schedules would look like.

18.204 In its response BT disagreed with the proposed obligations. On the ‘management accounts’ information BT said:

“Ofcom has proposed a remedy of price controls. Openreach will demonstrate compliance with the price control, however, it is not clear why Ofcom need the cost schedules, nor what Ofcom would do with such schedules. The charge controls will not be re-set annually, so, Openreach proposes that the cost schedules are not required”.\(^{1393}\)


\(^{1392}\) The relevant charge control level cost accounting obligations are discussed in Sections 13, 15 and 17.

\(^{1393}\) Paragraph 78, BT response to the July 2013 FAMR Consultation, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf.
18.205 BT also noted some of the ‘management accounting’ information in the proforma was in fact RFS information. They also suggested some amendments to the proformas.

18.206 As discussed above, the charge controls for TRCs have been set on the basis of a range of estimates of cost (relative to prices), including Direct Labour Costs uplifted by an estimated percentage for indirect costs, with indexation for the review period. The prices for SFIs, as also set out above, are to be aligned with TRC charges, e.g. based on the hourly TRC charge applied to the estimated time taken to complete an average module. For the purposes of monitoring the effectiveness of our remedy, BT needs to provide to us the direct and indirect volume, revenue and cost information as set out in Annex 5. Annex 5 highlights the subset of this information BT must ensure is published annually alongside the RFS nine months after the end of the relevant year.

18.207 The purpose of the information required is to see what impact our regulation has had both in actual revenue and profits. We need to be able to assess to what degree BT continues to over or under recover its costs once charges are set, in order to assess whether our remedies are working as expected when we set them. However, we have taken on board some of the comments BT has made about the proformas previously provided and have amended these in Annex 5.

18.208 As we have not been able to set TRC and SFI charges on the explicit basis of actual FAC, due to the data concerns and lack of information available to us in the required timescale, BT should provide us with the information set out in Annex 5 in the form of an Additional Financial Information (‘AFI’) which will not be published. We information is necessary to allow us to effectively monitor compliance with other SMP conditions, to enable our timely intervention to ensure that those other SMP obligations continue to effectively address the underlying competition problems identified in our market analysis and to inform our market reviews and the setting of SMP obligations including, charge controls.
Section 19

Remedies: Charge control conditions and legal tests

19.1 In this Section, we explain how the charge controls for LLU services, WLR services, wholesale ISDN2 and wholesale ISDN30 exchange line services are structured and how the conditions will work in practice. In particular, we discuss the following:

- how the conditions will work alongside other regulation (see paragraph 19.4);
- the effects of the conditions and the structure of the ‘baskets’ of services (see paragraphs 19.5 to 19.32);
- the calculation of whether BT is complying with the charge ceilings created by the controls1394, including:
  - determining the overall change in prices for each service or basket of services (paragraphs 19.35 to 19.38); and
  - determining the controlling percentage that is applicable to each service or basket of services (paragraphs 19.39 to 19.43);
- the information required from BT to enable Ofcom to monitor compliance with the charge controls (paragraph 19.47); and
- how the conditions allow for corrections where there has been over- or under-recovery (paragraphs 19.44 to 19.46).

19.2 We also explain in this Section (from paragraph 19.48 onwards) why we consider that each of the charge controls for LLU services, WLR services, wholesale ISDN2 and wholesale ISDN30 exchange line services satisfy the legal tests set out in the CA03 and have been imposed in accordance with our legal duties (including our duty to take utmost account of the Costing and Non-discrimination Recommendation).

1394 As discussed below, in the case of most LLU and WLR services the charge controls will be structured as a ‘CPI-X’ (controlling percentage) pricing constraint. However:
- for TRCs, the controlling percentage has been set without taking account of CPI (although it will take account of wage inflation and certain efficiency adjustments);
- for those wholesale ISDN2 and ISDN30 services which are subject to a basket charge control, the controlling percentage does not take account of inflation and, therefore, requires the charges to remain constant in nominal terms;
- for certain individual services (for example, for ISDN2 transfers, ISDN30 transfers, caller display, MPF cease and SMPF cease services), we have imposed a simple price ceiling (in £ per unit terms) for the duration of the charge control period rather than defining the pricing constraint in percentage terms. This is also the case for many charge controlled products during the first year of the charge control. We do not discuss in this Section (other than in the ‘legal tests’ part below) those charge controls which impose a simple price ceiling constraint; and
- for SFIs, we have imposed a form of price ceiling constraint although this will require BT to set its charges for SFIs by reference to the SFI charge component and the average module duration.
19.3 Although we have decided to impose a charge control on GEA migrations (see Condition 7B of the legal instrument in Annex 29), we discuss this in detail in Section 12 above rather than in this Section.

**Interaction with other remedies**

19.4 In this Statement we are imposing a number of SMP conditions by way of remedy to BT’s SMP. These conditions will impose a number of obligations on BT as to how it offers and provides wholesale services in the WLA, WFAEL, wholesale ISDN2 and ISDN30 markets. These other remedies are discussed in further detail in the previous sections of this Statement and will work alongside the charge controls to address the concerns arising from BT’s SMP in the WLA, WFAEL, wholesale ISDN2 and wholesale ISDN30 markets.

**The conditions**

19.5 The SMP service conditions 7A, 7C, 7D and 7E have three key effects. They will:

- set charge controls from 1 July 2014 until 31 March 2017 for the services specified;
- ensure that average charges for services subject to charge controls do not increase by more than a controlling percentage, typically defined by the value of ‘X’ in CPI-X\textsuperscript{1395}; and
- require BT to provide information annually to Ofcom to enable compliance monitoring.

19.6 Conditions 7A, 7C, 7D and 7E are set out in full in Annex 29.

**Charge controls on rental products**

19.7 In Section 16 we set out our decision to impose charge controls on the main rental products in each of the WLA and WFAEL markets. The charge controls on MPF, SMPF and basic WLR rental services have been implemented as single (rather than basket) charge controls and are set out in Conditions 7A.1(f), 7A.1(g) and 7C.1(a) respectively.

19.8 Further, in Section 17 we set out our decision to impose charge controls on the main rental products in each of the wholesale ISDN2 and ISDN30 markets. However, these are being implemented as basket charge controls. In particular:

- ISDN30 rentals will be subject to a basket charge control with other ISDN30 connections and enhanced care services (see Condition 7D.2(a)); and
- ISDN2 rentals will be subject to a basket charge control with other ISDN2 connections services (see Condition 7E.2(a)).

\textsuperscript{1395} As noted in footnote 1394, certain controls are defined in £ per unit terms, rather than as a controlling percentage.
19.9 Further detail on the ISDN2 and ISDN30 basket charge controls is set out below in paragraphs 19.20 to 19.25.

**Basket structure**

**LLU Ancillary Services**

19.10 In Section 16 we set out our decision to have five separate baskets for LLU ancillary services.

19.11 We have structured Condition 7A to give effect to this. As explained in Section 16, we have decided to impose a control on each of the five separate baskets of LLU ancillary services, which are separately identified in Condition 7A.1 as:

- Tie Cables;
- Hard Cease Services;
- MPF New Provide Services;
- Other LLU Ancillary Services; and
- Co-Mingling New Provide and Rental Services.

This structure means that the aggregate charges for each basket of services will be subject to a CPI-X charge control.

19.12 Parts 1 to 5 of the Annex to Condition 7A set out details of those individual products and/or services that are included within each of the baskets set out above. The relevant formula for calculating the percentage change in prices for services within each of these baskets is set out in Condition 7A.4.

19.13 As explained in Section 4 of Volume 2, we have specified the starting (‘initial’) charge for each individual product and/or service included in a LLU ancillary services basket. This is reflected in Parts 1 to 5 of the Annex to Condition 7A, which each contain a column entitled ‘Initial Charge’. These starting charges are consistent with those applicable as at 31 March 2014.

19.14 Further, we are setting sub-caps for each individual service or product in a LLU ancillary services basket. These sub-caps are set out in Condition 7A.6, and impose a sub-cap for each individual service within a basket equal to the controlling percentage increased by 7.5 percentage points.

19.15 Additionally, as discussed in paragraphs 19.29-19.31 below, we are imposing a requirement on BT to align its charges between MPF and SMPF comparable products within the Hard Cease Services and Other LLU Ancillary Services baskets. Condition 7A.10 gives effect to this requirement.

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1396 These starting charges are the same as those announced by Openreach as at 31 March 2014.
**WLR Connection Services**

19.16 In Section 16 we have set out our decision to set a basket control over the following two products:

- WLR Standard Connection; and
- WLR Start of Stopped MPF Line.

We have called this basket the ‘WLR Connection Services’ basket.

19.17 We have structured Condition 7C to give effect to this. The Annex to Condition 7C sets out details of those individual products and/or services which are included within the WLR Connection Services basket. The relevant formula for calculating the percentage change of this basket is set out in Condition 7C.4 and is similar to that applicable to the LLU ancillary services baskets.

19.18 In line with our approach to the LLU ancillary services baskets contained in Condition 7A, and as discussed in Section 5 of Volume 2, we have specified the starting (‘initial’) charge for each of the individual products included in the WLR Connection Services basket. This is reflected in the Annex to Condition 7C, which contains a column entitled ‘Initial Charge.’ These starting charges are consistent with those applicable as at 31 March 2014.

19.19 Consistent with our approach to the LLU ancillary services baskets, we have also set sub-caps for each individual service within the WLR Connection Services basket. These sub-caps are set out in Condition 7C.5 and, for each individual service within the basket, are equal to the controlling percentage increased by 7.5 percentage points.

**ISDN30 rentals, connections and enhanced care services**

19.20 In Section 17 we explain our decision to impose a basket charge control for ISDN30 rentals, connections and enhanced care services (combined with separate sub-control baskets on each of ISDN30 connections and enhanced care services).

19.21 We have structured Condition 7D to give effect to this. The relevant formula for calculating the percentage change of these baskets is set out in Condition 7D.4.

19.22 We have not listed the levels of the starting (‘initial’) charge for each of the individual products included in these baskets. Rather, we have specified that they should be as at the level charged by Openreach on 31 March 2014.

**ISDN2 rentals and connection services**

19.23 In Section 17 we explain our decision to impose a basket charge control for ISDN2 rentals and connections charges.

19.24 We have structured Condition 7E to give effect to this. The relevant formula for calculating the percentage change of this basket is set out in Condition 7E.4.

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1397 See footnote 1394 above.
19.25 Similarly to the ISDN30 basket charge controls, we have not listed the levels of the starting ('initial') charge for each of the individual products included in the ISDN2 rentals and connection charges baskets. Rather, we have specified that they should be as at the level charged by Openreach on 31 March 2014.

**LLU specific provisions**

19.26 Condition 7A imposes a number of specific controls on particular LLU services. We have set out below some key features of Condition 7A.

**Special Fault Investigation services**

19.27 As explained in Section 18, we have decided to impose charge controls on certain SFI services that are within the scope of the LLU network access requirement. These services were not subject to a charge control in the previous LLU charge control. We have concluded that the charges for such SFIs should be aligned with our cost estimate (and in particular, the underlying TRC cost estimates). However, while we are setting the maximum hourly (and visit) rate in an SFI module, BT will have discretion over the average module duration that ultimately informs the module price at the start of the charge control period.

19.28 As a result we have imposed a requirement on BT to ensure that its charges as at 1 July 2014 (and until 31 March 2017) for relevant SFIs do not exceed the amount of the SFI hourly charge component (which is aligned with the underlying hourly TRC cost estimate) multiplied by the average module duration (with an additional charge for certain modules where a visit is included). The SFI charge components have been indexed at a rate of 0.2% (as discussed in Section 18). The concepts of percentage change and controlling percentage do not therefore feature within our charge control on such SFIs. Condition 7A.3 sets out the relevant formulae to be applied in order to determine the charge control applicable to relevant SFIs.

**Alignment obligations**

19.29 In Condition 7A.8 we impose a requirement for the charges made for certain MPF SFI services to be the same as the equivalent SMPF SFI service. This does not prevent the charges for the respective services from being increased or decreased (subject to compliance with the individual charge controls which apply to these services as a result of Condition 7A.3), but requires that these are equivalent between the respective services.

19.30 Conditions 7A.9 and 7A.10 impose a similar requirement in respect of LLU and WLR enhanced care services and between MPF and SMPF comparable services within the ‘Hard Cease Services’ and ‘Other LLU Ancillary Services’ baskets, respectively. For example, Condition 7A.9 requires the price of certain LLU enhanced care services to be the same as the equivalent WLR enhanced care service. This does not prevent the charges for the services covered by this Condition from being increased or decreased, but requires that these are equivalent between the respective services.

19.31 As discussed in Section 4 of Volume 2, we have decided that a fair and reasonable charges obligation should apply to LLU and WLR enhanced care services in addition

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1398 Where a visit is included in the SFI, it should also be aligned with our underlying TRC visit cost estimate.
to the alignment obligation set out in Condition 7A.9. This is confirmed in Condition 1.3 and reflects the fact that these services are not subject to a charge control; the alignment obligation only constrains the relative prices between LLU and WLR enhanced care services and not the absolute level of charges.

WLR specific provisions

19.32 As explained in detail in Section 16, we have also set the charge controls such that BT is required to discount the price of the charges for WLR Conversion and/or any of the individual services included in the WLR Connection Services basket (namely WLR Standard Connection and WLR Start of Stopped MPF Line) if these are provided simultaneously with SMPF New Provide. It shall be presumed that CPs have requested simultaneous provision of these services with SMPF New Provide (and, therefore, that the discount should apply) unless the relevant services were not actually simultaneously provided as a consequence of the particular request made by the requesting CP. This has been implemented by reducing the price for WLR Conversion, WLR Standard Connection and/or WLR Start of Stopped MPF Line and this is implemented in Conditions 7C.2(c)(ii), (k) and (l).

The rules that BT needs to follow to comply with the charge controls

19.33 Most of the charge controls conditions restrict the change in charges compared to the level they were at in the previous year. To do this, the charge controls conditions involve formulae for calculating two things:

- the ‘Percentage change’ for each charge control, which is the actual percentage change in charges compared to the level in the prior year; and the

- the ‘Controlling percentage’ for each charge control, which is the amount by which charges are allowed to change under the charge control conditions (which is typically expressed using a CPI-X formula).

19.34 If BT sets charges exactly in line with the charge controls, the percentage change and the controlling percentage will be equal. If they are different, then BT has either set charges above or below the level allowed by the charge control. As discussed in paragraph 19.46 below, if BT has set charges above the level allowed by the charge control, we require BT to repay that over-recovery to users.

Formulae to show how the Percentage Change is calculated for each service

19.35 At each of Conditions 7A.5, 7C.3, 7D.5 and 7E.5, we have set out the formula that we will use (and expect BT to use) to determine the percentage change for single product services. For the first year of the charge controls, various products will be subject to specific charge ceilings rather than having a percentage change applied. Those ceilings are set out at Conditions 7A.2, 7C.2, 7D.3 and 7E.3.

19.36 In relation to the LLU ancillary services, WLR connection services, ISDN2 and ISDN30 charge control baskets, the formulae we will use to monitor the percentage change for the services each year is necessarily more complex as it needs to take a

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1399 See footnote 1394 above.
revenue-weighted average of the services contained within the baskets.\textsuperscript{1400} As explained in detail in Section 4 of Volume 2 of this Statement, we will also monitor BT’s compliance with the basket controls using a prior-year weights approach. The relevant formula we will use for calculating the percentage change of each of the baskets is set out in Condition 7A.4, 7C.4, 7D.4 and 7E.4.

19.37 We consider that BT should have the flexibility to make multiple price changes in respect of a particular service (subject to meeting its other regulatory obligations). However, in order to make the control clearer and to address potential gaming:

• first, we have been more explicit about the way we will weight service prices to reflect the proportion of the year during which they were in effect; and

• second, we will generally evaluate price changes for each service in relation to the weighted average charge that applied during the prior control year for that service, rather than being based on the price on the last day of the prior control year. However, as discussed in Section 5 of Volume 2, in the case of determining compliance with the charge control baskets during the first year of the charge control, the starting ‘initial’ charge\textsuperscript{1401} for each product in the relevant basket will be used rather than a weighted average charge.

19.38 These are similar to the adjustments we included in the 2013 narrowband charge controls.\textsuperscript{1402}

\textbf{The formulae for calculating the controlling percentage}

19.39 The formulae to be applied in order to determine the controlling percentage for a particular product and/or service during a relevant year are set out in Conditions 7A.7, 7C.6, 7D.6 and 7E.6.

19.40 As discussed in Section 16 and subject to paragraph 19.42 below, those charge controls applicable to LLU and WLR products and/or services are generally based on a ‘CPI-X’ formula.

19.41 As discussed in Section 17 and subject to paragraph 19.42 below, we have decided to impose a constant nominal charge control on those services included within our wholesale ISDN2 and ISDN30 charge controls. As a result, the controlling percentage will not evolve with out-turn CPI or any other form of indexation.

19.42 We have decided that it would be more appropriate to adopt a simpler approach for the purposes of calculating the controlling percentage applicable to TRCs, which takes into account the wage inflation rate and the efficiency assumptions (rather than CPI). As a result, the controlling percentage will not evolve with out-turn CPI. This is the case for our charge controls on TRCs which are within scope of the network access requirements in the WLA, WFAEL, wholesale ISDN2 and wholesale ISDN30 markets.

\begin{footnotesize}
\textsuperscript{1400} As discussed in paragraph 19.37 below, we also use a weighted average of Openreach’s charges in the case of single charge controls, although this is less complicated than our formulae for basket charge controls.

\textsuperscript{1401} As noted above, this is the charge announced by Openreach as at 31 March 2014.

\textsuperscript{1402} For more explanation of why we have made these changes see paragraphs 11.66-11.69, Ofcom, \textit{Review of the fixed narrowband services markets – statement}, 26 September 2013, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/nmr-2013/statement/Final_Statement.pdf}.
\end{footnotesize}
19.43 As other LLU and WLR services subject to a charge control are generally subject to a ‘CPI-X’ constraint, we have adopted a different formula for calculating the controlling percentage applicable to TRCs that are within scope of the LLU and/or WLR network access requirements. The specific formulae for TRCs in these markets are set out at Conditions 7A.7(b) and 7C.6(b) and are identical to those applicable to other relevant LLU and WLR services save that they do not include any reference to CPI.

**Charge controls adjust to account for under- or over-recovery in prior year**

19.44 We have decided that the level of the charge control applicable in a relevant year should not be affected by whether the charges in prior years were in line with the charge control or not. Accordingly, if the average price change made by BT during the ‘prior relevant year’ (for a single or basket charge control) is higher or lower than permitted by the associated controlling percentage constraint, the controlling percentage constraint for the following year will adjust to be at the level it would have been had charges in the prior relevant year been in line with the charge control.

19.45 The mechanism that we have adopted in order to achieve this is set out in Conditions 7A.7(e) and (f), 7C.6(e) and (f), 7D.6(d) and 7E.6(d), and is different to that used in previous WLR and LLU charge controls. The mechanisms we have adopted in this Statement are clearer than those previously used and align more closely with the style of the charge control conditions in the 2013 Narrowband Market Review.

19.46 To prevent BT from being able to gain from setting charges above the charge control, Conditions 7A.7(g), 7C.6(g), 7D.6(e) and 7E.6(e) require BT to automatically repay any excess revenue to affected CPs where the percentage change in revenues in any relevant year exceeds the controlling percentage.1403 We consider that this is appropriate to ensure effective compliance with the charge controls. This is also consistent with the charge control formulae in the 2013 Narrowband Market Review.

**The information that BT is required to supply to Ofcom**

19.47 We have set out in Conditions 7A.12, 7C.8, 7D.8 and 7E.8 the information that BT is required to supply to Ofcom in order for us to be able to monitor its compliance with the controls. Consistent with the obligations in place in the existing charge controls, this information will be required to be supplied by BT on an annual basis, by no later than the 30 June after the end of the relevant financial year (three months after 31 March). Note that, although the period of the control ends on 31 March 2017, these Conditions would themselves remain in force in order to maintain the obligation to supply data (and should it be necessary to direct an adjustment of pricing in the event of non-compliance in an earlier charge control year).

**Legal Tests**

19.48 We consider that each of the charge controls on LLU services, WLR services, wholesale ISDN30 and ISDN2 exchange line services satisfy the legal tests set out in the CA03 and have been imposed in accordance with our legal duties.

19.49 In particular, we set out below why we consider that:

1403 This automatic repayment mechanism is not applicable for SFIs which are charge controlled in accordance with Condition 7A.3.
the imposition of each of the charge controls satisfies the criteria contained in
Section 47(2) of the CA03 and is authorised pursuant to Sections 87(9) and 88 of
the CA03; and

in formulating each of the charge controls, we have complied with our relevant
statutory duties, particularly those under Sections 3 and 4 of the CA03.

19.50 Given the substantial overlap in our reasoning, for the purpose of explaining why we
consider the legal tests to be met we have set out our position on the charge controls
for LLU, WLR, wholesale ISDN30 and wholesale ISDN2 services together below.

19.51 To give legal effect to our decision to impose charge controls for LLU, WLR,
wholesale ISDN30 and ISDN2 exchange line services, we have adopted four SMP
conditions under Section 87(9) of the CA03: Condition 7A (for LLU), Condition 7C (for
WLR), Condition 7D (for ISDN30) and Condition 7E (for ISDN2). The text of these
conditions is set out in Schedule 1 to the statutory notification published under
Section 48A of the CA03 in Annex 29.

Powers under sections 87 and 88 of the CA03

19.52 Section 87(1) of the CA03 provides that, where Ofcom has made a determination that
a person (in this case BT) has SMP in an identified services market (in this case the
WLA, WFAEL, wholesale ISDN30 and wholesale ISDN2 markets in the UK excluding
the Hull Area), Ofcom shall set such SMP conditions authorised by that section as
Ofcom considers appropriate to apply to that dominant provider in respect of the
relevant network or relevant facilities and apply those conditions to that person.

19.53 Section 87(9) of the CA03 authorises the setting of SMP conditions to impose on the
dominant provider:

• such price controls as Ofcom may direct in relation to matters connected with the
  provision of network access to the relevant network, or with the availability of the
  relevant facilities;

• such rules as Ofcom may make in relation to those matters about the recovery of
costs and cost orientation;

• such rules as they may make for those purposes about the use of cost accounting
  systems; and

• obligations to adjust prices in accordance with such directions given by Ofcom as
  they may consider appropriate.

19.54 Section 88 of the CA03 states that Ofcom should not set an SMP condition falling
within Section 87(9) except where it appears from the market analysis that there is a
relevant risk of adverse effects arising from price distortion and it also appears that
the setting of the condition is appropriate for the purposes of:

• promoting efficiency;

• promoting sustainable competition; and

• conferring the greatest possible benefits on the end-users of public electronic
  communications services.
19.55 In setting a charge control, Section 88 also requires that we must take account of the extent of the investment in the matters to which the condition relates of the person to whom the condition is to apply.

19.56 In our opinion, Conditions 7A, 7C, 7D and 7E satisfy Section 88 of the CA03. As discussed from paragraph 8.7 above, in light of our finding that BT has SMP in each of the relevant fixed access markets in the UK excluding the Hull Area, we are of the view that (absent the charge controls) there is a real risk of adverse effects arising from price distortion by BT as it might fix and maintain some or all of its prices for LLU, WLR, wholesale ISDN30 and wholesale ISDN2 services at an excessively high level.

19.57 As discussed below, we also consider that the charge control conditions for LLU, WLR, wholesale ISDN30 and wholesale ISDN2 services are appropriate for the purposes of promoting efficiency and sustainable competition and conferring the greatest possible benefits on the users of public electronic communications services.

**Promoting efficiency**

19.58 We consider that each of the charge control conditions for LLU, WLR, wholesale ISDN30 and ISDN2 services are appropriate for the purpose of promoting efficiency, since in the absence of competitive pressures, we believe that BT would have limited incentives to seek to reduce its costs of providing these services.

19.59 As explained in Sections 16 to 18 of this volume and Section 3 of Volume 2, by setting a charge control (whether in the form of a CPI-X, nominal or other form of incentive regulation which sets the price-cap independently of incurred costs for a period of time), BT is encouraged to increase its productive efficiency. This will be achieved by allowing BT to keep any super-normal profits that it earns within a defined period by reducing its costs over and above the savings envisaged when the charge control was set. The benefits of any cost savings would potentially accrue to the regulated company in the short-term and this would give BT incentives to make those efficiency savings. In the longer term these cost savings could be passed to consumers through reductions in prices, either as a result of competition or through subsequent charge controls. In our view, this form of price regulation is also preferable to a rate of return type of control.

19.60 In addition:

- by ensuring BT cannot price excessively and by bringing prices more in line with costs, each of the LLU, WLR, wholesale ISDN30 and ISDN2 charge controls will increase allocative efficiency\(^\text{1404}\),

- the charge control conditions relating to wholesale ISDN30 and ISDN2 services will ensure prices which encourage efficient migration from declining services to newer replacements and encourage efficient investment in new technologies;

- each of the LLU and WLR charge controls, as well as those charge controls concerning TRCs across each of the wholesale fixed access markets, have been

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\(^{1404}\) When prices better reflect the underlying costs of production, allocative efficiency is enhanced. Meeting demand at cost-reflective prices will result in resources being allocated to the goods or services that consumers value most.
specifically set to allow BT to earn a reasonable rate of return (the cost of capital) if it is efficient. When considering BT’s forward looking costs for these services, we have assumed that BT will have underlying efficiency gains of 5%.\textsuperscript{1405} This is the approach that Ofcom has applied over charge control periods to encourage efficient investment;

- by imposing baskets:
  - for LLU ancillary services which are homogeneous in terms of their characteristics, competitive conditions and costs (see Conditions 7A.1(a) to (e));
  - for WLR Connection Services (see Condition 7C.1(p));
  - for wholesale ISDN30 rentals, connections and enhanced care services (see Condition 7D.2(a)); and
  - for wholesale ISDN2 rentals and connections services (see Condition 7E.2(a)); and

- we also provide BT with the flexibility to change its prices to meet the necessary demand conditions by recovering common costs in the most efficient manner across these services (subject to any relevant sub-caps).

**Promoting sustainable competition and conferring the greatest possible benefits on end-users**

19.61 We also consider that the charge control conditions for LLU, WLR, ISDN30 and ISDN2 services are appropriate to ensure sustainable competition and to confer the greatest possible benefits on users of public electronic communication services.

19.62 Our view is that each of the charge controls prevent excessive pricing and, by applying at the wholesale level, will promote sustainable retail competition which we consider is likely to be the most effective way of benefiting end-users of public electronic communications services. Having identified the appropriate services to be subject to charge controls and the level of those controls will enable greater choice of services for end-users in terms of choice, price, quality of service and value for money.

19.63 Although each of our charge controls on LLU, WLR, wholesale ISDN30 and ISDN2 services apply in some cases to baskets of services, we have included appropriate safe-guards to ensure that BT does not use the pricing flexibility offered to it in an anti-competitive manner to the detriment of end-users. In particular, we have imposed separate controls on wholesale ISDN30 transfers (under Condition 7D) and wholesale ISDN2 transfers (under Condition 7E) as these services are both important for switching and therefore competition in the retail provision of ISDN30 and ISDN2 lines respectively. We have also imposed sub-caps for each of the individual services

\textsuperscript{1405} See Annex 16 where we explain our decision to impose a single efficiency target of 5% per annum in the context of the LLU and WLR charge controls, and paragraphs 18.181-18.188 of Volume 1 of this Statement where we explain why we have chosen to index the non-labour cost elements of the TRC and SFI charges in line with this 5% efficiency target.
within a basket in the LLU and WLR charge controls and sub-caps for each of ISDN30 connections and enhanced care services.

**Investment matters**

19.64 When deciding to impose each charge control for LLU, WLR, wholesale ISDN30 and ISDN2 services, we have also taken into account the need to ensure that BT has the incentives to invest and innovate where it is efficient to do so.

19.65 In most instances, we have done this in the following three respects:

- first, in modelling BT’s costs for the LLU and WLR charge controls and considering how these will change over time (including the costs of TRCs across each of the fixed access markets), we have built in a reasonable rate of return on investment;

- second, we have used forms of charge controls (based on incentive regulation rather than rate of return regulation) which encourage and reward productive efficiency; and

- third, we have adopted the anchor pricing approach for the LLU and WLR charge controls (save for charge controls on TRCs within the scope of these network access requirements), which incentivises investment in innovative and more efficient NGA technology.

19.66 In the case of wholesale ISDN30 and ISDN2 services, we have also taken into account the fact that materially lower charge controls for these services may risk that cost recovery is not achieved and may therefore undermine future investment incentives in other products.

19.67 We consider that each of the charge controls for LLU, WLR, wholesale ISDN30 and ISDN2 services strike a good balance between potential risk and reward. As they are all set for a fixed duration, BT can benefit under the controls if it manages to increase market share or if outturn costs are lower than anticipated when the charge controls were set.

**We have considered the test in Section 47 of the CA03**

19.68 In addition to the requirements in Sections 87(9) and 88 discussed above, Ofcom must be satisfied that any SMP Condition satisfies the test in Section 47(2) of the CA03, namely that it is:

- objectively justifiable in relation to the networks, services or facilities to which it relates;

- not such as to discriminate unduly against particular persons or a particular description of persons;

- proportionate as to what it is intended to achieve; and

- in relation to what it is intended to achieve, transparent.

19.69 For the following reasons we are satisfied that this test is met in relation to Conditions 7A, 7C, 7D and 7E.
Objective justification

19.70 We have set out in Sections 3 to 7 our determination that BT has SMP in the access markets covered by Conditions 7A, 7C, 7D and 7E. In the absence of any charge controls on LLU, WLR, wholesale ISDN30 and ISDN2 services, this would allow BT to set charges unilaterally and excessively. This would have adverse impacts on both the ability of companies to compete in the downstream provision of services and on consumer choice, price, quality and value for money. Our view is that BT is unlikely to be incentivised to reduce its costs or set prices at the competitive level. Each of the LLU, WLR, wholesale ISDN30 and ISDN2 charge controls have been structured to address these risks while allowing BT to recover its efficiently incurred costs, including a reasonable return on investment. Additionally, we have reviewed each service within the markets so that we have introduced an appropriate level of control for individual services where appropriate.

19.71 The structure of each of the controls is such that BT has an incentive to continue to seek efficiency gains and benefit from efficiencies achieved that are in excess of those anticipated in the review.

19.72 Each of the charge controls are also objectively justifiable in that the benefits of incentive (rather than rate of return) regulation are widely acknowledged as an effective mechanism to reduce prices in a situation where competition does not act to do so.

Undue discrimination

19.73 We are satisfied that each of the charge controls for LLU, WLR, wholesale ISDN30 and ISDN2 services will not discriminate unduly against a particular person or particular persons because any CP, including BT itself, will be able to access the services at the charge levels set by the condition.

19.74 Ofcom considers that the charge controls do not discriminate unduly against BT as it is the only CP to hold SMP in the relevant markets (for the UK excluding the Hull Area) and the controls seek to address that market position, including BT’s ability and incentive to set excessive charges for services falling within the controls.

Proportionality

19.75 We are satisfied that the charge controls for LLU, WLR, wholesale ISDN30 and ISDN2 services are proportionate because BT’s obligations apply to the minimum set of charges required for the delivery of services within those markets where we have identified BT as having SMP (namely, the WLA, WFAEL, wholesale ISDN30 and ISDN2 markets in the UK excluding the Hull Area). The charge controls that we have decided to impose are focused on ensuring that there are reasonable prices for those access services, which are critical to the development of a competitive market.

19.76 The modelling for the LLU and WLR charge controls ensures BT is able to recover a reasonable return on investment. As a result, and due to its presence in the downstream markets, BT will have incentives to continue to invest and develop its access network. Moreover, the maximum charges BT is allowed to set over the period of the charge controls have been formulated using information on BT’s costs and a consideration of how these costs will change over time.
19.77 Further, by including an uplift in the costs of repair and provision in the Cost Model to reflect our decision to impose minimum standards on the quality of service provided by Openreach, each of the LLU and WLR charge controls ensure that the relevant wholesale charges are subject to appropriate controls while still allowing BT to maintain service quality and innovation in LLU and WLR services in the UK excluding the Hull Area.

19.78 We therefore consider that each of the charge controls for LLU, WLR, wholesale ISDN30 and ISDN2 services are necessary in that they do not, in our view, impose controls on the prices that BT may charge that go beyond what is required to achieve the aim of addressing BT’s ability and incentive to charge excessive prices for these services.

Transparency

19.79 We consider that each of the LLU, WLR, wholesale ISDN30 and ISDN2 charge controls are transparent in relation to what they are intended to achieve. The aims and effects of each of these charge controls are clear and they have each been drafted so as to secure maximum transparency. We have consulted fully on each of these charge controls and our reasoning\footnote{In particular, we consulted on our decision to impose these controls in the following consultation documents (as applicable): Ofcom, \textit{Fixed access market reviews: Approach to setting LLU and WLR Charge Controls}, 11 July 2013, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/ summary/LLU_WLR_CC_2014.pdf}; Ofcom, \textit{Fixed access market reviews: Openreach quality of service and approach to setting LLU and WLR Charge Controls}, 19 December 2013, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-llu-wlr-charge-controls/ summary/famr-2013.pdf}; Ofcom, \textit{Fixed access market reviews: Further consultation on notification periods, compliance with requirements on the VULA margin, and approach to pricing for TRCs and SFIs}, 16 January 2014, \url{http://stakeholders.ofcom.org.uk/binaries/consultations/famr-2014/ summary/famr-2014.pdf}.} and have clearly explained our final decisions (including our analysis of responses to our consultations) in this Statement. Additionally, we have published alongside this document a version of our volume forecasting model and a version of the Cost Model and the RAV model (suitably redacted to address BT’s legitimate concerns regarding confidential information) used to set the LLU and WLR charge controls.

19.80 The text of the LLU, WLR, wholesale ISDN30 and ISDN2 charge control conditions has been published in Annex 29 and the operation of those conditions is aided by our explanations in this document.

\textbf{We have considered Sections 3 and 4 of the CA03}

19.81 We also consider that the charge control conditions for LLU, WLR, wholesale ISDN30 and ISDN2 services are consistent with our duties under Sections 3 and 4 of the CA03.

19.82 For the reasons set out above, we consider that the charge controls that we have decided to impose will, in particular, further the interests of citizens and of consumers in relevant markets by the promotion of competition in line with Section 3 of the CA03. In particular, each of the charge controls seek to ensure the availability of appropriate services throughout the UK of a wide range of electronic communications services. In imposing each of these charge controls, we have had regard to the
desirability of promoting competition in relevant markets, the desirability of encouraging investment and innovation in relevant markets and the desirability of encouraging the availability and use of high speed data transfer services throughout the UK.

19.83 We have placed particular emphasis on the promotion of competition in the downstream retail markets, which we consider is likely to be the most effective way of furthering citizen and consumer interests in the relevant retail markets. In addition, we have taken into account further objectives, including ensuring that services are available at charges that are reasonably related to the efficient costs of supply (preferably as a result of effective competition) and investment and innovation (namely, the objective of promoting efficient investment in the development of new and innovative services by BT and other CPs).

19.84 Further, we consider that, in line with Section 4 of the CA03, each of the LLU, WLR wholesale ISDN30 and ISDN2 charge controls will, in particular, promote competition in relation to the provision of electronic communications networks and will encourage the provision of network access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers.

19.85 In particular, we consider that these charge controls would prevent excessive pricing by BT and ensure that wholesale charges reflect efficiently incurred costs while, in the case of wholesale ISDN30 and ISDN2 services, encouraging efficient migration from declining wholesale ISDN30 and ISDN2 services to newer replacements (e.g. IP-based services) and efficient investment in new technologies.

The Costing and Non-discrimination Recommendation

19.86 In September 2013, the European Commission published, under Article 19(1) of the Framework Directive, its Recommendation on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment (the Costing and Non-discrimination Recommendation).1407 At the time of the July 2013 LLU WLR Consultation, the Commission had sought BEREC’s opinion on a draft version of the Costing and Non-discrimination Recommendation and in paragraphs 3.192 to 3.202 of the July 2013 LLU WLR Consultation we described the potential implications for these charge controls of the draft EC Recommendation on the recommended costing methodology.

19.87 Recommendations under Article 19(1) of the Framework Directive aim to achieve the harmonised application of the provisions of the EU regulatory framework in order to further the achievement of the objectives set out in Article 8 of the Framework Directive. Article 8 contains the communications policy and regulatory principles that underpin the EU regulatory framework.

19.88 Article 19(1) requires EU Member States to ensure that national regulatory authorities (such as Ofcom) take utmost account of such Recommendations. If a national regulatory authority chooses to depart from a Recommendation it must inform the

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European Commission, giving the reasons for its position. Consistent with this, section 4A of the CA03 requires Ofcom to take due account of all such Recommendations of the European Commission when carrying out its functions.

19.89 As it is based on Article 19(1), the Costing and Non-discrimination Recommendation has an EU harmonising objective. In this regard, the recitals to the Costing and Non-discrimination Recommendation note that the recommendation seeks to (among other things) establish predictable and stable regulated wholesale copper access prices as a means of promoting efficient investment and innovation in new and enhanced infrastructure while recognising the need to maintain effective competition. It does this by way of a recommended costing methodology for copper access services.

19.90 Recitals 25-28 to the Costing and Non-discrimination Recommendation set out the objectives of the recommended costing methodology:

"(25) A costing methodology that leads to access prices replicating as much as possible those expected in an effectively competitive market is appropriate to meet the objectives of the Regulatory Framework. Such a costing methodology should be based on a modern efficient network, reflect the need for stable and predictable wholesale copper access prices over time, which avoid significant fluctuations and shocks, in order to provide a clear framework for investment and be capable of generating cost-oriented wholesale copper access prices serving as an anchor for NGA services, and deal appropriately and consistently with the impact of declining volumes caused by the transition from copper to NGA networks, i.e. avoiding an artificial increase in wholesale copper access prices which would otherwise be observed as a result of customers migrating to the NGA network of the SMP operator.

(26) Cost recovery is a key principle in a costing methodology. It ensures that operators can cover costs that are efficiently incurred and receive an appropriate return on invested capital.

(27) A costing methodology that provides the appropriate ‘build-or-buy’ signal strikes an appropriate balance between ensuring efficient entry and sufficient incentives to invest and, in particular, to deploy NGA networks and hence deliver new, faster and better-quality broadband services.

(28) The recommended costing methodology should ensure transparency and consistency within the Union. It should ensure that specific national circumstances are reflected under a consistent modelling approach”.

19.91 The principles set out in the Costing and Non-discrimination Recommendation apply to the market for wholesale network infrastructure access (which in the case of the UK excluding the Hull Area comprises the WLA market). Therefore, in reaching our decisions on the charge control for LLU services (which is imposed in the WLA

1408 Recital 3 of the Costing and Non-discrimination Recommendation.
market), we have taken utmost account of the Costing and Non-discrimination Recommendation.

**Stakeholder responses to the July 2013 and December 2013 LLU WLR Consultations**

19.92 At the time of our July 2013 LLU WLR Consultation, the Costing and Non-discrimination Recommendation was not finalised, but we did consider the draft that was available at that time. The final Costing and Non-discrimination Recommendation was published before responses to the July 2013 LLU WLR Consultation were sent to Ofcom.

19.93 Openreach did not engage with the issues raised by the draft EC recommendation, beyond noting that MPF rental charges “are at the very bottom end of the 8 to 10 euro per month benchmark” referenced in the Costing and Non-discrimination Recommendation.1409

19.94 Adaptive Spectrum and Signal Alignment, Inc. ('ASSIA') noted that Ofcom has said that it preferred in general to set charges using cost and asset values derived from the Most Efficient Available ('MEA') technology that performed the same function as the current technology, though Ofcom proposed a different approach to these charge controls. ASSIA said that using an MEA approach would be consistent with the Costing and Non-discrimination Recommendation. ASSIA said that Ofcom needed to ensure that by the end of the charge control (if it runs to 31 March 2017), “the costs recovered by Openreach are those of an MEA-costed, NGA FTTC network consisting at least partly of optical elements”.1410

19.95 Virgin agreed with Ofcom’s CCA FAC costing methodology, which it said was preferable to a LRIC+EPMU basis. Virgin noted that BT had historically prepared its accounts on a CCA FAC basis, and argued that LRIC based reporting was derived from FAC and therefore not subject to the same level of regulatory scrutiny (not being included in the regulatory audit). Virgin thought that Ofcom should continue to take into account national characteristics, which might “objectively justify” divergence from that set out in an EC Recommendation.1411

19.96 EE considered the proposal in the December 2013 LLU WLR Consultation to set the WLR, MPF and SMPF rentals such that the difference between WLR+SMPF minus MPF was £10 in 2016/17 violated the principles set out in the Costing and Non-discrimination Recommendation. It considered that setting charges such that the difference between WLR+SMPF and MPF was equal to the difference in LRIC by 2016/17 much more closely complied.1412

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Recommended costing methodology in the Costing and Non-discrimination Recommendation

19.97 Points 30 to 37 of the Costing and Non-discrimination Recommendation set out a recommended costing methodology for NRAs to follow if setting copper and NGA wholesale access prices which NRAs should ensure is implemented by 31 December 2016 at the latest.

19.98 As set out in Section 16 and Annexes 11-13, 22 and 23, for the purpose of setting these charge controls we have used a model that is based on relevant cost components contained in BT’s 2011/12 RFS, which are then forecast forward using AVEs and CVEs applied to our volume forecasts, input price inflation and efficiency. However, for the reasons set out below, we consider that taking such an approach is consistent with the application of the transitional period allowed for in the Costing and Non-discrimination Recommendation to avoid unnecessary disruption and provide a stable and transparent regulatory approach.

19.99 We also consider that the costing methodology that we have adopted is consistent with the harmonising objectives and intent of the Costing and Non-discrimination Recommendation, including pricing stability.

19.100 The main form of NGA deployed by Openreach in the UK is FTTC as an overlay to the existing copper network. The recommended costing methodology potentially could be adopted in the UK by considering an FTTC network. If a bottom-up scorched node FTTC model were adopted (i.e. using the actual exchange and cabinet configuration), then this would mean that the FTTC network would re-use all the network currently in place between the cabinet and the end-user premises (‘D-side’ assets).

19.101 Points 33 and 34 of the Recommendation specify that reusable legacy civil engineering assets should not be valued on a replacement cost basis, but should be valued on the basis of an indexation method, using regulatory accounting cost information. We consider that valuing these assets on the basis of the indexation approach is consistent with the approach we have adopted, under our RAV model for copper and duct assets.

19.102 Assuming an FTTC approach, all the D-side assets would be reusable for the NGA network. We would therefore expect the recommended costing methodology would result in D-side costs being unchanged compared to the current methodology. We also note that D-side costs account for the large majority of the cost base for MPF rentals. We therefore consider that for the large majority of the cost base the modelling approach that we have adopted is consistent with the recommended costing methodology.

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1414 Non-reusable civil engineering assets are defined in Point 6(o) of the Costing and Non-discrimination Recommendation as “those legacy civil engineering assets that are used for the copper network but cannot be reused to accommodate an NGA network”. We note that a large part of the “copper” assets result from the cost of placing the copper in the ground rather than the value of the copper metal, and so may be regarded as civil engineering assets.
19.103 For those parts of the network from the exchanges to the cabinets (E-side assets), Point 37 of the Costing and Non-discrimination Recommendation recommends a methodology that adjusts a modelled NGA network (which might be an FTTC model for the UK) to reflect the cost of providing the access product on copper by replacing the optimal elements with efficiently priced copper elements. Provided that the copper is efficiently priced, the methodology that we have adopted is likely to result in the same outcome as envisaged by the Costing and Non-discrimination Recommendation.

19.104 Moreover, while the Recommendation focuses on the use of LRIC+, it is not prescriptive on the method of calculating the ‘+’. CCA FAC can normally be considered as a particular form of LRIC+ (since in the presence of common costs CCA FAC is likely to be greater than LRIC). Therefore, we do not see our use of CCA FAC as a substantive difference from the recommendation to use LRIC+. In so far as the recommendation to use a LRIC-based model is to get a better understanding of the cost-drivers in the access network, it should be noted that the CVEs and AVEs used in the cost model are derived from LRIC to FAC ratios. Moreover, we have set the charge controls for WLR and LLU with close regard to the LRICs of the relevant services (e.g. in respect of the LRIC differential for the main rentals – see Sections 3 and 6 of Volume 2 – and in relation to setting migration charges at LRIC rather than FAC – see Section 4 of Volume 2).

Implementation period for the recommended costing methodology

19.105 The Costing and Non-discrimination Recommendation states that the recommended methodology is likely to lead to average EU monthly rental access prices for a fully unbundled copper local loop of between €8 and €10 (expressed in 2012 prices). Point 42 of the Recommendation provides that, where prices in the Member State concerned are within that price band at the time of entry into force of the Costing and Non-discrimination Recommendation (in September 2013), the national regulatory authority may continue to apply its existing costing methodology until 31 December 2016.

19.106 The recommendation entered into force in September 2013, so we have adjusted the range for inflation between 2012 and September 2013. This gives a range of €8.15 to €10.19. The MPF rental charge in the UK in September 2013 was £84.26 per year, or £7.02 per month. This is equivalent to €8.34 per month. The UK therefore meets the requirement in Point 42 for retaining the current methodology until December 2016.

19.107 As explained in Section 3, we have decided that it is appropriate to set the charge controls such that they continue until the end of March 2017. This means that the charge controls will not be based on a bottom up LRIC+ NGA model as of 1 January 2017. However, we do not consider that it would be appropriate to truncate the final year of the charge controls because this reflects the particular national characteristics.

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1415 Point 41 of the Costing and Non-discrimination Recommendation.
1416 Point 42 says that the monthly rental prices should be “adjusted according to the Union average (annual) retail price index”. We used the change in the total Harmonised Index of Consumer Prices for the EU28 between the average for 2012 (which was 118.43) and September 2013 (which was 120.68). The inflation data can be found at: http://epp.eurostat.ec.europa.eu/portal/page/portal/hicp/data/database.
of the UK, in that the charge controls are based on information that uses an April to March financial year, which is the financial year used by BT in reporting regulatory cost information (as well as its statutory accounts) while continuing to maintain stable copper access prices.

19.108 In addition, Point 40 of the Costing and Non-discrimination Recommendation specifies that a national regulatory authority may continue to apply its exiting methodology beyond 31 December 2016 provided certain conditions are satisfied. These conditions are that the costing methodology adopted meets the objectives set out in recitals 25 to 28 of the Costing and Non-discrimination Recommendation (set out above) and that it satisfies the following criteria:

- if not modelling an NGA network, it should reflect a gradual shift from a copper network to an NGA network;
- it should apply an asset valuation method that takes into account that certain civil infrastructure assets would not be replicated in the competitive process;
- it should be accompanied by documented projections of copper network prices showing that they will not fluctuate significantly and therefore will remain stable over a long time period and that the alternative methodology meets the objective of regulatory transparency and predictability as well as the need to ensure price stability; and
- it should require only minimal modifications with respect to the costing methodology already in place in that Member State in order to meet the first three of these criteria.

19.109 For the reasons set out below, we consider that continuing with the current methodology is consistent with the requirements in Point 40.

19.110 In relation to the objectives of the recommended costing methodology as set out in Recitals 25 to 28, we consider that our methodology is consistent with these objectives. In particular,

- our methodology aims to set efficient copper access prices, provides stable and predictable wholesale prices over time, avoids significant fluctuations and shocks, and provides a clear framework for investment. Our anchor pricing approach deals appropriately and consistently with the impact of declining volumes caused by the transition from copper to NGA. We do this by modelling all lines as if they were based on copper, so that all lines pick up the same amount of common cost per line. This avoids an artificial increase in copper access prices as a result of migration to NGA;
- our approach allows BT to recover its efficiently incurred cost (including an appropriate return on invested capital);
- our approach provides appropriate ‘build or buy’ signals for ensuring efficient entry and incentives to invest, including in deployment of NGA networks. This includes providing appropriate ‘build or buy’ signals for CPs accessing Openreach’s network by setting the difference in charges between WLR+SMPF/WLR and MPF to be equal to LRIC by 2016/17. The copper prices serve as an anchor for NGA services; and
we have consulted on setting these charge controls and our approach has been transparent. We consider that ending the controls on 31 March 2017 reflects specific national circumstances in that it reflects BT’s reporting cycle.

19.111 We also consider that our methodology meets the four criteria specified in Point 40:

- if not modelling an NGA network, [the methodology used] should reflect a gradual shift from a copper network to an NGA network: the methodology we have adopted does not model an NGA network and is instead based on an anchor pricing approach which involves a hypothetical continuation of a copper-only network. This approach involves modelling all lines as though they were copper, thereby preventing copper prices from rising due to expenditure on NGA and migration to NGA. We consider that this aspect of our methodology deals with the gradual shift to NGA in a way that is consistent with the objectives of the methodology, for example in terms of generating stable and predictable copper access prices and avoiding an artificial increase in wholesale copper access prices which would otherwise be observed as a result of customers migrating to the NGA network of the SMP operator (as set out in Recital 25);

- it should apply an asset valuation method that takes into account that certain civil infrastructure assets would not be replicated in the competitive process: we consider our RAV adjustment is consistent with this criterion. The RAV relates to copper and duct access assets that BT acquired before August 1997. The RAV was determined in 2005 and has been rolled forward each year by indexation for RPI, less depreciation;

- it should be accompanied by documented projections of copper network prices showing that they will not fluctuate significantly and therefore will remain stable over a long time period and that the alternative methodology meets the objective of regulatory transparency and predictability as well as the need to ensure price stability: we have set out in Table 28.5 the projected charge controls that will apply until March 2017. This decision means the MPF and WLR rental charges to March 2017 are transparent and predictable and are subject to relatively small movements each year. In this regard we would note that the MPF rental charge will remain fairly stable and well within the €8 to €10 per month range that the Commission anticipates will result from the application of the key features of the recommended costing methodology. In reaching our decision, we have followed a transparent consultation process, which included publishing a non-confidential version of the model used to set the charge control; and

- it should require only minimal modifications with respect to the costing methodology already in place in that Member State in order to meet the first three criteria: the previous charge controls reflected an on-going copper network, based on CCA FAC and the RAV model for copper and duct. We have adopted the same modelling approach for these charge controls and in this regard have made minimal changes to our modelling methodology.

19.112 We have notified the European Commission of our conclusions in this regard under the Article 7 procedure of the Framework Directive.