



Fixed access market reviews:  
Openreach quality of service and  
approach to setting LLU and WLR  
Charge Controls

Redacted for publication [✂]

Consultation

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## Section 1

# Executive Summary

- 1.1 In July 2013, Ofcom published two consultations setting out proposals as part of the fixed access market reviews (FAMR).<sup>1</sup> The first consultation (the July 2013 FAMR Consultation)<sup>2</sup> set out proposed market definition findings, market power determinations and remedies. The proposed remedies included proposals in relation to the imposition of a new minimum standard condition for Openreach's quality of service and charge controls for local loop unbundling (LLU) and wholesale line rental (WLR) services. The second (the July 2013 Consultation)<sup>3</sup> set out specific charge control proposals, including the nature, form and duration of the proposed charge controls for LLU and WLR services. In those consultations we said that we would consult further on the level of any minimum service quality standards, service level cost differentials and fault rates. We also said that we would conduct further work to understand the appropriate allocation of broadband line testing faults.
- 1.2 This consultation seeks stakeholder views on our analysis and proposals in relation to:
  - 1.2.1 minimum standards for provisioning and fault repair for LLU and WLR services;
  - 1.2.2 the differential in costs associated with delivering LLU and WLR services to Service Level 1 and Service Level 2;
  - 1.2.3 the treatment of fault rates in the charge controls; and
  - 1.2.4 a number of other changes and updates to our proposals for charge controls on LLU and WLR services in light of Ofcom's further work and responses to our July 2013 Consultation. These include changes to our charge control design, cost allocations and modelling proposals.
- 1.3 We do not repeat in this document the description or reasoning relating to the full set of July 2013 Consultation proposals. Instead we focus on those areas in which we have revised our proposals or introduced new proposals.

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<sup>1</sup> The fixed access market reviews (FAMR) cover the Wholesale Local Access<sup>1</sup> (WLA), Wholesale Fixed Analogue Exchange Line (WFAEL), wholesale ISDN2 and wholesale ISDN30 markets. In July 2013, Ofcom consulted on its provisional view that in the UK excluding the Hull Area, BT (Openreach)<sup>1</sup> has Significant Market Power (SMP) in these markets and that charge controls are necessary as a remedy to address Openreach's ability to fix or maintain prices at an excessively high level for services in the respective markets. This consultation also forms part of our review of these markets and sets out our revised charge control proposals

<sup>2</sup> 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/consultations/fixed-access-market-reviews/> (July 2013 FAMR Consultation)

<sup>3</sup> Ofcom, *Fixed access market reviews: Approach to setting LLU and WLR Charge Controls - Consultation*, 11 July 2013, Updated 20 August 2013: <http://stakeholders.ofcom.org.uk/consultations/llu-wlr-cc-13/> (July 2013 Consultation)

- 1.4 In forming the proposals set out in this consultation, we have taken account of stakeholder responses to the July 2013 Consultation<sup>4</sup> and the July 2013 FAMR Consultation.<sup>5</sup> We have also considered and had regard to, where relevant, the Competition Commission's Determination of 27 March 2013 (the Determination)<sup>6</sup> following appeals brought against the current LLU and WLR charge controls. Where stakeholder responses to the July consultations raised issues that are not the subject of this consultation these responses will be considered in our final statement on the FAMR.
- 1.5 Based on the policy proposals and financial modelling explained in the July 2013 Consultation and adjusted as set out in this consultation, Tables 1.1 and 1.2 below set out the revised base case and ranges for the proposed LLU and WLR charge controls (Charge Controls).

## Structure of the proposed Charge Controls

Table 1.1: Proposed LLU charge controls 2014-17

Basket/service	2011/12 <sup>7</sup> revenues (£m)	Current Charge 2013/14 (£) <sup>8</sup>	Charge for 2014/15 base case (range) nominal (£)	Charge control for 2015/16 to 2016/17 base case (range)
MPF Rental	451	84.26	85.30 (82.78 to 88.81)	CPI -1.25% (CPI -4.25% to CPI +3.00%)

<sup>4</sup> <http://stakeholders.ofcom.org.uk/consultations/llu-wlr-cc-13/?showResponses=true>

<sup>5</sup> In respect of quality of service and caller display issues. See

<http://stakeholders.ofcom.org.uk/consultations/regulated-access-market-reviews/?showResponses=true>

<sup>6</sup> Competition Commission, *References under section 193 of the Communications Act 2003: British Telecommunications Plc v Office of Communications, Case1193/3/3/12; British Sky Broadcasting Limited and TalkTalk Telecom Group Plc v Office of Communications, Case1192/3/3/12 – Determinations*, 27 March 2013, [http://catribunal.org/files/1192-93\\_BSkyB\\_CC\\_Determination\\_270313.pdf](http://catribunal.org/files/1192-93_BSkyB_CC_Determination_270313.pdf)

<sup>7</sup> Source: External revenues as per BT RFS 2012, 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 2012-13 WLR/LLU Charge Control Compliance statement.

<sup>8</sup> Ofcom expects shortly to issue a statement in response to the remittal directions from the Competition Appeal Tribunal of 29 April 2013 following the appeal of the current LLU and WLR charge control. It is likely that this statement will lead to a change to the current charges for MPF rental, SMPF rental and WLR rental. Given the proximity of this correction to the publication of this document we have not been able to reflect any changes in our cost model or in the numbers and 'Xs' presented in this consultation. For the final decision on the charge controls we will update the cost model to incorporate any changes to starting charges and make any consequential changes to the appropriate Xs.

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Basket/service	2011/12 <sup>7</sup> revenues (£m)	Current Charge 2013/14 (£) <sup>8</sup>	Charge for 2014/15 base case (range) nominal (£)	Charge control for 2015/16 to 2016/17 base case (range)
SMPF Rental	43	9.75	7.61 (7.57 to 7.63)	CPI-6.25% <sup>9</sup> (CPI-6.5% to CPI-6%)
MPF Single Migration	31	30.65	31.50 (30.55 to 32.65)	CPI+ 0.5% (CPI -2.5% to CPI +4.25%)
MPF Bulk Migration	15	28.42	26.23 (25.42 to 27.22)	CPI -10% (CPI -12.75% to CPI -6.5%)
SMPF Single Migration	8	30.65	31.50 (30.55 to 32.65)	CPI+ 0.5% (CPI -2.5% to CPI +4.25%)
SMPF Bulk Migration	2	28.42	26.23 (25.42 to 27.22)	CPI -10% (CPI -12.75% to CPI -6.5%)
SMPF New Provide	25	30.65	30.35 (29.41 to 31.49)	CPI -3.25% (CPI -6.25% to CPI +0.5%)
MPF New Provides basket	[REDACTED] [£55m-£65m]	45.53	44.11 (42.74 to 45.78)	CPI -1.75% (CPI -5% to CPI+2%)
Hard Ceases basket	[REDACTED] [£15m-£25m]	Various	CPI -9.25% (CPI -11.75% to CPI -6.75%)	CPI -9.25% (CPI -11.75% to CPI -6.75%)
Other LLU ancillaries	[REDACTED] [£50m-	Various	Various	CPI- 5%

<sup>9</sup> In all sensitivities used to generate this table we have assumed that charges are set such that the difference in charges between WLR+SMPF and MPF is £10 and the difference between WLR and MPF is £3 in 2016/17. These constraints mean that SMPF is £7 in 2016/17 in both our high and low sensitivities. In all sensitivities, we have set the MPF and WLR charges such that the total forecast revenue from MPF, WLR and SMPF is equal to the forecast total cost. (In this table we nevertheless show a range for SMPF, because we have rounded up the high case and rounded down the low case).

Basket/service	2011/12 <sup>7</sup> revenues (£m)	Current Charge 2013/14 (£) <sup>8</sup>	Charge for 2014/15 base case (range) nominal (£)	Charge control for 2015/16 to 2016/17 base case (range)
basket	£110m]			(CPI -6% to CPI +0%)
Co-Mingling New Provides and Rentals basket	[REDACTED] [£30m-£55m]	Various	Various	CPI+1.75% (CPI -1% to CPI+4.50%)
Tie Cables basket	28	54.15	50.70 (49.36 to 51.98)	CPI -8.5% (CPI -11% to CPI -6.25%)

Source: Ofcom (except where otherwise indicated)

**Table 1.2: Proposed WLR charge controls 2014-17**

Service	2011/12 <sup>10</sup> revenues (£m)	Current charge 2013/14 (£)	Charge for 2014/15 base case (range) nominal (£)	Charge control for 2015/16 to 2016/17 base case (range)
WLR Rental	2,042	93.27	90.69 (88.11 to 94.29)	CPI -2.5% (CPI -5.5% to CPI+1.25%)
WLR Transfer	13	3.39	4.83 (4.69 to 4.97)	CPI+40.25% (CPI+36% to CPI+44.5%)
WLR Connections basket <sup>11</sup>	27	47.11	44.82 (43.47 to 46.41)	CPI -7.25% (CPI -10.00% to CPI -3.75%)
WLR+SMPF Simultaneous Connections <sup>12</sup>	N/A	77.76	62.93 (60.97 to 65.32)	CPI -21.25% (CPI -23.75% to CPI -18.25%)
WLR+SMPF Simultaneous	N/A	30.65	31.50 (30.55 to 32.65)	CPI +0.5% (CPI -2.5% to

<sup>10</sup> Source: Internal and External revenues as per BT RFS 2012, page 36; and BT's response to 11<sup>th</sup> s.135 to BT (revenue for Caller Display).

<sup>11</sup> 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%2B30URCuKyqKmgSNUNelS4WkJBRh6z%2FRUAlt8maxtgrEro1A7%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".

<sup>12</sup> WLR+SMPF 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 (see Section 6 for more details).

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Service	2011/12 <sup>10</sup> revenues (£m)	Current charge 2013/14 (£)	Charge for 2014/15 base case (range) nominal (£)	Charge control for 2015/16 to 2016/17 base case (range)
Migration <sup>13</sup>				CPI +4.25%)
WLR Conversion	N/A	30.65	31.50 (30.55 to 32.65)	CPI +0.5% (CPI - 2.5% to CPI +4.25%)
Caller Display	[REDACTED] c.25	6	0.35 – 0.5	0.35 - 0.5

Source: Ofcom (except where otherwise indicated)

## Quality of service proposals

- 1.6 On the basis of the analysis undertaken since July, we set out for consultation the detail of our proposals on quality of service, including the SMP condition we propose to apply for minimum service quality standards. The minimum standards we propose over the next three years are set out in Table 1.3 below. The standards include a fixed allowance for *force majeure* (MBORC) events. This means that there would be no additional exceptions that Openreach could invoke in meeting the standards we are proposing to set (see Section 3).
- 1.7 For the repair and provision appointment completion minimum standards we are proposing transitional targets for the first and second years and that they should fall within the ranges shown. We are seeking stakeholders' views on the figures shown in brackets which is our initial view of the appropriate targets within these ranges.

**Table 1.3: Proposed minimum Openreach service quality standards (includes force majeure allowance)**

Minimum standard	MBORC allowance	First Year (range)	Second Year (range)	Final Year
Repair completion within SLA timescales	3%	67% (60%-75%)	72% (68%-76%)	77%
12 day provision appointment availability	1%	54% (41%-64%)	67% (60-71%)	79%
Provision appointment completion by appointment date	1%	89%	89%	89%

Source: Ofcom

- 1.8 We are also proposing a number of additional Key Performance Indicators (KPIs) to allow public visibility of Openreach's service performance, with particular focus on monitoring Openreach's management of services which are delivered late.

<sup>13</sup>WLR+SMPF 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 (see Section 6 for more details).

## Structure of charge controls

### Differential between WLR+SMPF and MPF rental charges

- 1.9 In the July 2013 Consultation we proposed to set MPF, WLR and SMPF rental charges so that the difference between the charges for WLR+SMPF and MPF aligns with the difference in the long run incremental costs (LRIC) of providing them. We have undertaken significant further work to understand elements of BT's cost base and the likely range of the LRIC differential. We consider that it is in the range of £0 to £4. In July, we explained that our proposal was that we would set the rental charges to reach the LRIC differential at the end of the next charge control period. Our policy continues to be to move the charge differential to the LRIC differential. We consider, however, that there is a case for extending the period (or 'glide path') over which the charges will converge on the LRIC differential to beyond the end of the next charge control period. We are particularly interested in receiving submissions from stakeholders providing information and evidence on these issues. Section 7 covers our approach to estimating the LRIC differential, and Section 8 covers setting the glide path to reach it.
- 1.10 For the reasons set out in Section 8, we propose that the differential between WLR+SMPF and MPF should be £10 at the end of the charge control period (2016/17). We are also consulting on an option of the differential falling to £2 (the mid-point of our current estimate of LRIC) by 2016/17. The rental charges for that option are set out in Table 1.4 below. In this option, there is no difference in the charges between WLR and MPF by 2016/17, reflecting our current view of the likely LRIC differential.

**Table 1.4: Charge controls for key rental services for 2014-17 for £2 charge differential option**

Service	Current charge 2013/14 <sup>14</sup> (£)	Charge for 2014/15 <sup>15</sup> base case nominal (£)	Equivalent 2014/15 CPI-X control	Charge control for 2015/16 to 2016/17 base case
MPF Rental	84.26	86.62	CPI+0.5%	CPI+0.25%
SMPF Rental	9.75	5.01	CPI-50.75%	CPI-39.00%
WLR Rental	93.27	91.05	CPI-4.5%	CPI-2.25%

Source: Ofcom (except where otherwise indicated)

### New controls for Caller Display and discounts for simultaneously provided connections

- 1.11 We propose to introduce an individual control on Caller Display (which we described as "Caller ID" in the July 2013 FAMR Consultation). We also propose to introduce a discounted charge for WLR Connections services when they are provided simultaneously with SMPF New Provide. See Table 1.2 above and Section 6 below.

<sup>14</sup> Source: Internal and External revenues as per BT RFS 2012, page 36.

<sup>15</sup> Source: Internal and External revenues as per BT RFS 2012, page 36.

## Approach to setting Charge Controls

1.12 Based on the policy proposals and financial modelling explained in this consultation, the proposed controls set out in Tables 1.1 and 1.2 reflect the following factors and adjustments:

- **Minimum service quality standards:** to give Openreach the opportunity to recover its efficiently incurred costs associated with delivering to the new standards, we consider that the level of engineering costs for provisioning and fault repair should be 3.9% higher (see Section 3);
- **Service level costs differential:** we are proposing that a higher proportion (c.14%) of fault prevention and repair costs are allocated to Service Level 2 products compared to Service Level 1 products than in the present model (see Section 4) In our July 2013 Consultation, we allowed a 5.4% difference;
- **Fault rates:** we propose that the overall level of faults in the base year of the cost model should be what was actually experienced in recent years and which is consistent with the costs that we assume in the base year. We propose that fault rates should remain constant throughout the charge control period. We also propose to assume equal fault rates for MPF and WLR+SMPF (see Section 5);
- **Broadband line testing costs:** we are consulting on the treatment of evoTAM costs and our preferred option is to remove the cost of evoTAMs from the SMPF Rental charge and, for the avoidance of doubt, for them not to be recovered from any of the services covered by the LLU charge controls. In addition we propose that the full cost of the MPF Test Access Matrices (TAMs) will be recovered from the MPF Rental charge (see Section 7);
- **Other cost allocations:** we propose to remove the majority of DSLAM capital/maintenance costs which are currently recovered through the SMPF rental charge and we are consulting on our treatment of costs associated with employer liability claims for deafness; (see Section 7); and
- **Glide path:** we propose to use glide paths to bring charges into line with projected costs by the end of the control period, rather than one-off changes to charges at the start of the period. However, we propose to make immediate adjustments where we are either removing costs which we do not consider appropriate or introducing new controls where prices are currently significantly out of line with costs (see Section 8).

1.13 The combined effect of these proposals is to slightly reduce the charges for MPF rental and WLR rental in real terms. The proposals will significantly reduce SMPF rental charges in the first year, with more modest further reductions over the remainder of the control period.

**Table 1.5: Base case charge control proposals for key rentals for 2014-17**

Service	Current charge 2013/14 <sup>16</sup> (£)	Charge for 2014/15 base case nominal (£)	Equivalent 2014/15 CPI-X control	Charge control for 2015/16 to 2016/17 base case
MPF Rental	84.26	85.30	CPI-1.00%	CPI-1.25%
SMPF Rental	9.75	7.61	CPI-24.25%	CPI-6.25%
WLR Rental	93.27	90.69	CPI-5.00%	CPI-2.5%

Source: Ofcom (except where otherwise indicated)

## RFS base year for charge control cost modelling

### 2013 RFS costs with 2012 RFS allocations

- 1.14 For the purposes of the cost modelling undertaken for this consultation, we have drawn heavily on the data contained in BT's 2012 Regulatory Financial Statements (RFS). This is the same base year information as was used for the July 2013 Consultation. In July 2013, BT published its 2013 RFS and this contains more recent information on BT's costs. However, it also contains a number of material changes to the cost allocation methodologies.
- 1.15 For the reasons set out in more detail in Section 8, following this consultation we are proposing to proceed by updating the information in our cost model to take account of BT's costs reported in the 2013 RFS (where appropriate) but to retain the allocation methodologies used in the 2012 RFS.

### Next steps

- 1.16 Stakeholders are invited to provide their views on the proposals set out in this consultation. The consultation period runs for 8 weeks, to 13 February 2013. Please see Annex 1 for details on how to respond.
- 1.17 In January 2014 we intend to consult on a few specific areas of our FAMR proposals. This limited consultation will focus on revised proposals and new proposals arising from further work and responses to the July 2013 FAMR Consultation.<sup>17</sup> This planned consultation does not affect any of the issues covered in this consultation.
- 1.18 Following consideration of consultation responses we would expect to publish our Statement in spring 2014.

<sup>16</sup> Source: Internal and External revenues as per BT RFS 2012, page 36.

<sup>17</sup> Two of the issues on which we are intending to consult are proposals for time related charges (TRCs) and special fault investigations (SFIs). Stakeholders should be aware that these proposals may be implemented by way of an addition to the SMP conditions at Annex 15.

## Section 2

# Introduction

## Scope of this consultation

- 2.1 The purpose of this consultation is to seek stakeholders' views on:
  - 2.1.1 our proposals for: minimum standards for the quality of service delivered by BT (Openreach) when providing WLR and LLU services, the cost difference associated with delivering different service levels and fault rates (level, how the level is likely to change during the charge control period and relative level of fault rates for the key products); and
  - 2.1.2 revised proposals and new proposals on the charge control design, certain cost allocations and modelling.
- 2.2 In this Section we summarise the background to this consultation and briefly outline the legal and regulatory framework within which we are making these proposals. We also note the models and associated documents disclosed alongside this consultation and explain our approach to Impact Assessment and Equality Impact Assessment.
- 2.3 This consultation forms part of Ofcom's Fixed Access Market Reviews. In the July 2013 FAMR Consultation we set out the preliminary conclusions of our review of the fixed access markets in the UK. We assessed the state of competition in these markets and, where appropriate, we proposed regulatory obligations on CPs that we provisionally identified as having significant market power (SMP). The regulatory conditions we proposed were those that we identified as being appropriate to address the competition concerns arising out of that SMP. This consultation looks at two specific regulatory conditions that we proposed to impose on BT; namely, the proposed minimum standards for quality of service and the proposed charge controls for LLU and WLR services.
- 2.4 For the reasons set out in this consultation, we consider that our proposals in relation to the minimum standard are a necessary and proportionate means of addressing concerns in relation to the quality of service in the delivery of access services provided by Openreach. In July, we consulted stakeholders on our view that the provision of network access on fair and reasonable terms is critical to addressing SMP at the wholesale level, which in turn ensures the effectiveness of downstream retail competition. We explained our view that the quality of network access services should be sufficient to ensure that the remedy is effective. We said that if the standard of provision is below that expected by end users, this could potentially affect competition in the access markets. Appropriate standards of service delivery are a necessary component of the provision of effective network access. We consider that our proposals meet these objectives and are proportionate to those objectives.
- 2.5 In relation to the proposed charge controls for LLU and WLR services, we set out our view in the July 2013 FAMR Consultation that charge controls were necessary to address the ability and incentive of BT to price at an excessive level, leading to excessive prices for consumers and inhibiting downstream competition. In considering the appropriate charge controls we have had particular regard to the requirement to promote competition and to secure efficient and sustainable

competition which furthers citizens' and consumers' interests in these markets. These objectives are relevant to our duties under section 3 and 4 of the Act and the requirements of section 88 of the Act.

## Background

### Quality of Service review

- 2.6 As part of the July 2013 FAMR Consultation we consulted on a package of measures aimed at addressing concerns around the quality of service delivery by Openreach when providing WLR and LLU services. In the July 2013 FAMR Consultation we proposed a package of measures aimed at ensuring that Openreach's performance was acceptable. These included the following:
- enhanced reporting of KPIs for LLU, WLR and GEA services;
  - a requirement setting out which aspects of services delivery must be covered by Service Level Agreements and Service Level Guarantees;
  - a process for future contract modification negotiations with a clearly defined role for the Office of the Telecommunications Adjudicator (OTA) and Ofcom; and
  - setting minimum standards for LLU and WLR provision and repair.
- 2.7 In the July 2013 Consultation, we explained that setting minimum standards may impact the necessary costs incurred by Openreach. We provided some indicative impact on costs and resources but explained that further work would be required.
- 2.8 In the July 2013 Consultation we said that we would separately consult on the following areas:
- our proposals on minimum standards and the implications of these on the charge control; and
  - the cost difference associated with delivering Service Level 2 (as currently applied to MPF and SMPF) and Service Level 1 (as currently applied to WLR).
- 2.9 Also, in the July 2013 Consultation we also outlined the assumptions on which we were consulting in relation to fault rates, in particular the relative fault rates of MPF versus WLR+SMPF and the question of early life failures. We explained that, given the complexity of this issue, and the ongoing work being conducted by the OTA in coordination with industry, we needed to perform further work to better understand the issues currently surrounding fault rates. We explained that we would consult again on this issue in the future.
- 2.10 Since July 2013 Openreach, in conjunction with Ernst & Young (E&Y), has developed a model to understand the relationship between service quality standards and the resources and costs necessary to delivery them. We have been working with Openreach to understand and scrutinise this model and appointed Analysys Mason to provide an independent assessment. In addition we performed our own internal modelling work to further inform our understanding.

## Quality of service review proposals

- 2.11 This work has informed the proposals in this consultation. We set out our proposals for the level of minimum standards for LLU and WLR provision and repair and set out our estimate of the impact on Openreach's resources and associated costs and how this affects the proposed charge control (Section 3). We also propose to introduce KPIs on the management of those repairs and provisioning tasks not completed within the SLA.
- 2.12 This modelling work has also been used to inform our proposals on the cost difference associated with delivering Service Level 2 and Service Level 1 (Section 4).
- 2.13 In this consultation we review our proposals for minimum standards in light of the responses to the July consultations<sup>18</sup> and set out our revised proposals. We focus on those responses that directly impact on the minimum standards (Section 5). We will be responding to wider stakeholder comments on quality of service issues not directly relevant to our proposals in the final statement.
- 2.14 We have carried out additional work to understand faults on Openreach's copper fixed access network. We set out our views on trends in fault rates, how fault rates may change over the charge control period and the relative level of faults for the key products. To help inform our work we commissioned Cambridge Strategic Management Group (CSMG) to analyse Openreach's fault rate data.

## Charge control proposals

- 2.15 In this Consultation, we set out our revised proposals and new proposals in light of stakeholder responses to our July 2013 Consultation, and in the case of Caller Display (which we described as "Caller ID" in the July 2013 FAMR Consultation), also to the July 2013 FAMR Consultation, together with further analysis we have conducted since they were published.
- 2.16 Where stakeholder responses to the July consultations raised issues that are not the subject of this consultation these responses will be addressed in the final statement. We do not repeat in this document the description or reasoning relating to the full set of July 2013 Consultation proposals. Instead we focus on those areas in which we have revised our proposals or introduced new proposals.

## Charge control design (Section 6)

- 2.17 We propose setting six separate CPI-X basket controls on five defined sets of LLU ancillary services and one set of WLR ancillary services. These proposals group services with more homogeneous costs together and require charges for analogous services to be and remain aligned.

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<sup>18</sup> Responses to both the July 2013 FAMR Consultation, non-confidential versions of which are available at <http://stakeholders.ofcom.org.uk/consultations/fixed-access-market-reviews/?showResponses=true> and responses to the July 2013 Consultation, non confidential versions of which are available at <http://stakeholders.ofcom.org.uk/consultations/llu-wlr-cc-13/?showResponses=true>.

- 2.18 We also propose to introduce discounted charges for WLR Connections (a basket of two services)<sup>19</sup> when provided simultaneously with SMPF New Provide. This, broadly, extends the approach proposed for simultaneously provided migration services in our July 2013 Consultation to also cover connections. In light of this, we are now proposing to control SMPF New Provide at its fully allocated cost (FAC).
- 2.19 We propose to introduce an individual control on Caller Display. We propose to set the charge for Caller Display equal to our estimate of the LRIC of the service from the start of the next charge control, and to keep it constant in nominal terms. Under our proposals, 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.

### Charge control cost allocations and modelling (Section 7)

- 2.20 In Section 7, firstly we cover our proposals for adjustments to cost allocations, secondly we set out our proposed approach to estimating the LRIC differential between WLR+SMPF vs MPF, thirdly we outline our approach to the base year data for the charge control cost modelling (see also paragraphs 1.11 and 1.12 above), and fourthly we outline our approach to the treatment of costs associated with deafness liability claim and BT's career transition centre within base year costs.
- 2.21 We propose to remove the costs of evoTAMs from the costs recovered through these Charge Controls (instead of allocating the costs of evoTAMs solely to SMPF as we had proposed in July).<sup>20</sup> We continue to propose that the full cost of TAMs be recovered from MPF rentals, and we provide an update on our current view of these costs.
- 2.22 We propose immediately to remove 70% of the DSLAM capital/maintenance costs currently allocated to SMPF from the costs recovered through these Charge Controls. For the remainder of costs which we understand relate to broadband fault repairs, we propose 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 same fault rate ratios as proposed in Section 5.
- 2.23 As noted above, we set out in Section 7 our approach to estimating the LRIC differential between MPF and WLR+SMPF. We review the top-down method – as set out in the July 2013 Consultation involving service level LRIC: FAC ratios. We then set out a bottom up method using cost components consistent with our modelling – by estimating the LRIC in 2016/17 for each cost component, using the AVE and CVE in our model for that year (adjusted as appropriate).

### Proposed Charge Controls (Section 8)

- 2.24 In Section 8, we first describe and seek views on our approach to setting the glide path to bring the charge differential to £10 by the end of the control period. We then set out the level and ranges of our proposed Charge Controls, including the sensitivities we have applied to obtain those ranges.

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<sup>19</sup> WLR Standard Connection and WLR Start of Stopped MPF Line

<sup>20</sup> See paragraphs 6.148 to 6.150 of the July 2013 Consultation.

## Charge control implementation (Section 9)

- 2.25 Section 9 covers our proposals on Charge Control implementation, including changes to charge control formulae and it sets out why we consider that revised proposals in this consultation continue to meet the relevant statutory legal tests.
- 2.26 In light of responses to the July 2013 Consultation and the July 2013 FAMR Consultation (the July Consultations), and further analysis, we propose to modify the charge control formulae for LLU, WLR, ISDN2 and ISDN30:
- 2.26.1 to better incentivise compliance with the charge control by requiring Openreach to automatically repay any excess revenue to affected CPs where the percentage change in revenues in any year exceeds the controlling percentage; and
  - 2.26.2 to improve clarity by aligning the presentation as closely as possible, by means of adopting the form of the charge control conditions used in the 2013 Narrowband Market Review.
- 2.27 Because we propose to make these changes, we are notifying as part of this consultation the revised ISDN30 and ISDN2 charge control formulae, as well as the LLU and WLR charge control formulae.
- 2.28 The text of the amended charge control SMP conditions is set out in Annex 15.

## **The legal and regulatory framework**

- 2.29 Annex 7 of the July 2013 FAMR Consultation<sup>21</sup> sets out an overview of the legal and regulatory framework for the market review process, including for the imposition of remedies, providing appropriate context for the matters that document discussed. The subsequent July 2013 FAMR Consultation and the July 2013 Consultation respectively stated the legal tests relevant to our quality of service review and setting the LLU and WLR charge controls and how in each case the proposals met those tests. Those Sections should be read alongside the proposal set out in this consultation as supplemented by Section 9. Section 9 explains, amongst other things, why our position in relation to the ECs recommendation on consistent non-discrimination obligations and costing methodologies<sup>22</sup> remains as in the July 2013 Consultation and the July 2013 FAMR Consultation.

## **Disclosure of models and associated documents**

- 2.30 In developing our proposals on model disclosure, we have had regard to our obligations under the Communications Act 2003 (the “Act”) and our Framework for Disclosure of Charge Control Models. In doing so, we have considered carefully the

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<sup>21</sup> Ofcom, Fixed access market reviews consultation annexes – Annex 7, July 2013, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/annexes/FAMR\\_Consultation\\_annexes.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/annexes/FAMR_Consultation_annexes.pdf)

<sup>22</sup> Commission Recommendation of 11 September 2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment, <https://ec.europa.eu/digital-agenda/en/news/commission-recommendation-consistent-non-discrimination-obligations-and-costing-methodologies>

confidential nature of the cost modelling relevant to our proposals and the need to ensure appropriate transparency.

## Quality of service

2.31 Alongside this Consultation, we are publishing a series of documents relating to our Quality of Service and Faults work. As explained in Section 3, this modelling is based on a model commissioned by Openreach from Ernst and Young to explore the relationship between quality of service and resources for its main services (MPF, analogue and digital WLR, SMPF and GEA) which we refer to as the Resource Simulation Model.

2.32 We have had detailed discussions with Openreach on the confidential nature of the Resource Simulation Model. Given that BT has withheld its consent to disclosure of the Resource Simulation Model, we have considered what level of disclosure of the modelling is necessary to ensure effective consultation. In doing so we have balanced Openreach's confidentiality concerns against the need to ensure appropriate transparency. As a result of our assessment we are making the following documents available:

- a methodology document prepared by Ernst & Young which includes a detailed description and explanation of the Resource Simulation Model.<sup>23</sup> The document sets out the Resource Simulation Model scope, input data and calculation steps, and provides information on the key modelling assumptions (see Annex 6);
- an accompanying document prepared by BT which provides analysis of additional factors impacting service costs in very high performance scenarios. This document provides analysis of certain aspects of the model referred to as the glass ceiling and the task time uplift<sup>24</sup> (see Annex 7);
- an excel spreadsheet extract from the Resource Simulation Model which performs the post-processing of the simulation results, populated with randomised data. This will provide stakeholders with visibility of the workings of the redistribution algorithm which generates the model results. We refer to this as the Redistribution Worksheet and publish this alongside this consultation. Annex 8 contains an explanatory note on how the worksheet functions; and
- Analysys Mason's report on the Resource Simulation Model.<sup>25</sup> In addition to Analysys Mason's independent assessment of the model, this report includes a description of the model's workings and key assumptions (see Annex 9).

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<sup>23</sup> Ernst & Young (EY), *Openreach's Discrete Event Simulation Model: Methodology Document*, November 2013 (EY, Model Methodology Document)

<http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-llu-wlr-charge-controls/annexes/annex6.pdf>

<sup>24</sup> Openreach, *Openreach analysis of additional factors impacting service costs in very high performance scenarios*, November 2013 (Openreach, Supporting Document on the Model).

<http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-llu-wlr-charge-controls/annexes/annex7.pdf>

<sup>25</sup> Analysys Mason, *Quality of Service model assessment: Final report for Ofcom*, November 2013. (Analysys Mason, QoS Model Report). <http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-llu-wlr-charge-controls/annexes/annex9.pdf>

## Charge Control cost model and volumes forecast model

- 2.33 Alongside this Consultation, we are publishing an updated version of the charge control cost model (Cost Model). This forms Annex 12. As noted above, this model uses data from and underpinning the 2012 RFS.
- 2.34 Our modelling approach, together with the associated outputs, was explained in Section 6 and Annex 13 of the July 2013 Consultation. The updates to this approach are set out in Sections 8 and 9 and Annex 12 of this Consultation.
- 2.35 By way of a reminder, we have undertaken an approach to the cost modelling for these controls based on the costs of BT's network components (largely based on its Regulatory Financial Statements (RFS)) and AVEs/CVEs (i.e. a top-down model). Our financial model consists of information from BT's RFS as well as additional information which we obtained using our statutory powers.
- 2.36 We are also publishing an updated version of the volume forecasting model. This forms Annex 13. The changes from the version published in July 2013 are to align our estimate of customer churn with that used in the Single Jumpered MPF Dispute,<sup>26</sup> to include figures for hard cease volumes, and to include calculations for three new service volumes. See Annex 10 for detail. Our approach to volume forecasting was explained in the July 2013 Consultation at Annexes 8 and 9. We will address stakeholder responses on volume forecasting to the July 2013 Consultation in the final statement.

## Impact assessment and Equality Impact Assessment (EIA)

### Impact Assessment

- 2.37 Each of the FAMR Consultation and the July 2013 Consultation document constituted an impact assessment as defined by section 7 of the Communications Act 2003 (the Act). This consultation supplements those impact assessments. Further information about Ofcom's approach to impact assessments can be found in our guidelines *Better policy-making: Ofcom's approach to impact assessment*.<sup>27</sup>

### EIA

- 2.38 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. Annex 8 of the July 2013 FAMR Consultation set out our EIA for this market review.
- 2.39 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

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<sup>26</sup> See paragraphs 4.71-4.74, Ofcom, *Dispute between TalkTalk Group and BT Openreach about single jumpered MPF, Statement and Determination* (Single Jumpered MPF Dispute), 15 November 2013, [http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw\\_01109/](http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_01109/)

<sup>27</sup> Ofcom, *Better policy-making: Ofcom's approach to impact assessments*, July 2005, [http://stakeholders.ofcom.org.uk/binaries/consultations/better-policy-making/Better\\_Policy\\_Making.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/better-policy-making/Better_Policy_Making.pdf)

envisage any need to carry out separate EIAs in relation to race, gender equality or equality schemes under the Northern Ireland and Disability Equality Schemes.

## Document structure

2.40 The remainder of this consultation document is set out in the following structure:

- Section 3 – Quality of Service review: covers our proposals on the minimum standards;
- Section 4 – Service level cost differentials: covers our proposals on the differences in costs of Service Level 1 and 2 services;
- Section 5 – Fault Rates; covers our proposals on fault rate ratios;
- Section 6 – Charge Control design covers our proposals on: basket design and Caller Display;
- Section 7 – Charge Control cost allocations and modelling: covers our proposals on broadband line testing costs; DSLAM capital/maintenance costs; estimating the LRIC differential; the base year data for charge control cost modelling; and appropriate costs for inclusion in the base year;
- Section 8 – Proposed Charge Controls: covers our proposals on setting the glide path, the base case for which brings the differential in charges between WLR+SMPF and MPF to £10 by the end of the control period and sets out the proposed Charge Controls;
- Section 9 – Charge Control implementation covers our proposals on: charge control compliance; and legal tests.

2.41 Annexes cover:

- Annex 1: Responding to this Consultation
- Annex 2: Ofcom's consultation principles
- Annex 3: Consultation response cover sheet
- Annex 4: Consultation questions
- Annex 5: contains further detail on the Resource Simulation Model;
- Annex 6: comprises EY's Model Methodology Document;
- Annex 7: contains Openreach's Supporting Document on the Model;
- Annex 8: contains our Explanatory notes on the Redistribution Worksheet;
- Annex 9: comprises Analysys Mason's Quality of Service Model Report;
- Annex 10: comprises CSMG's Fault Rates Report;
- Annex 11: covers Cost modelling for simultaneously provided services;

Redacted for publication [X]

- Annex 12: comprises our Cost Model and explanation of the changes since our July 2013 Consultation (where not described elsewhere in this consultation);
- Annex 13: Volumes forecasting model;
- Annex 14: Correspondence on base year data;
- Annex 15: Draft legal instruments;
- Annex 16: Sources of evidence; and
- Annex 17: Glossary.

## Section 3

# Quality of service review

## Introduction

- 3.1 As we set out in the July 2013 FAMR Consultation, we are undertaking a review of matters related to the service quality that Openreach delivers in the supply of regulated wholesale fixed access services as part of our review of fixed access markets. This aspect of our review was prompted by evidence of a decline in Openreach's performance in relation to both provision and repair activity, as well as by the concerns of other CPs.
- 3.2 In the July 2013 FAMR Consultation, we set out the results of our analysis of service quality,<sup>28</sup> which included our review of 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.
- 3.3 We also consulted stakeholders on our view that the provision of network access on fair and reasonable terms is critical to addressing SMP at the wholesale level, which in turn ensures the effectiveness of downstream retail competition. The quality of network access services should be sufficient to ensure that the remedy is effective. If the standard of provision is below that expected by end users, this could potentially affect competition in the access markets. The BEREC Common Position recognises the frequently-arising issue of an SMP operator's incentive to favour its own downstream operations in relation to the quality of wholesale access products. The result can be that access products may not be of reasonable quality and service levels may not be comparable to those provided by the SMP operator's downstream business.
- 3.4 The proposals set out in the July 2013 FAMR Consultation in relation to quality of service included an SMP condition affecting BT that would put in place minimum standards for provisioning and repairs for WLR and LLU services. We explained that higher standards might cause Openreach to incur additional costs and that the proposal required us to consider how such costs might be reflected in the Charge Control. However, at the time of the publication of the July 2013 FAMR Consultation, we had not been able to obtain sufficiently robust estimates of the cost impact of minimum performance standards in order to present firm proposals for stakeholders' consideration. We therefore deferred consideration of the appropriate level of minimum standards until this Consultation.
- 3.5 Specifically, in the July 2013 FAMR Consultation, we highlighted the need to review a very detailed discrete event simulation model of Openreach's operations. This model was commissioned by Openreach and built by Ernst and Young. In this Consultation we refer to the model as the Resource Simulation Model. Since July, we have commissioned an independent validation and verification of the Resource Simulation Model to determine whether it could provide a sound basis for estimating the resource impacts of changes in service quality. We have set out our analysis of the model and the resource estimates produced by it in Annex 5.

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<sup>28</sup> See Ofcom, July 2013 FAMR Consultation - Annex 9.

3.6 This Consultation sets out our further analysis of this issue and responds to related points made by stakeholders.

3.7 In this Section, we set out the following revised and additional proposals:

- our further views as to the structure of the minimum standards - specifically our proposal to continue to use the existing SLA targets;
- our revised proposal that the minimum standards be measured with reference to BT's 9 General Manager (GM) areas plus Northern Ireland (rather than with reference to 26 forecasting regions plus Northern Ireland, as was proposed in the July 2013 FAMR Consultation);
- our analysis of the possible range within which the minimum standards would fall;
- our assessment of the cost implications of changing the minimum standards;
- our proposal that the minimum standards incorporate an allowance for force majeure (referred to by Openreach as Matters Beyond Our Reasonable Control, or MBORC) of 3% for faults and 1% for provisioning;<sup>29</sup>
- our proposal that the minimum standards for each region (including MBORC) be:
  - 79% of first available appointments for WLR and MPF offered within 12 days;
  - 89% of provisioning appointments for WLR and MPF completed by Contract Completion Date (CCD);
  - 77% of Service Level 1 repairs (currently WLR) completed within reported day plus 2 working days (excluding Saturday); and
  - 77% of Service Level 2 repairs (currently MPF and SMPF) completed within reported day plus 1 working day (including Saturday).
- our further proposal that Openreach be required to publish additional KPIs (on a national basis) to provide additional transparency on the 'tail' of provisions and repairs on which Openreach failed to meet the minimum standards.

### **Proposals on minimum standards for quality of service in the July 2013 FAMR Consultation**

3.8 We set out our proposals on minimum standards for quality of service in the July 2013 FAMR Consultation.<sup>30</sup> Key features of these proposals are that:

- the minimum standards should apply to the provision and repair of MPF and WLR lines, specifically to:

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<sup>29</sup> The effect will be to reduce the QoS minimum service standard by the respective percentage, but in compliance reviews failure to deliver to the target will always count, whether or not MBORC has been declared.

<sup>30</sup> Paragraphs 10.285-10.332, Ofcom, July 2013 FAMR Consultation

- the first available date for an appointment;
  - the completion of a provision; and
  - the repair of faults;
  - the minimum standards would be set by reference to the timescales currently set in the existing SLAs for these services;
  - MBORC - affected services would be included within the targets set;
  - performance against the minimum standard should be set and assessed over a 12 month period; and
  - compliance would be measured on a regional basis, with reference to each of Openreach's 26 forecasting regions plus Northern Ireland.
- 3.9 We explained that, given the concerns expressed by Openreach's customers about recent performance, we were minded to set the minimum standards above recent performance levels.<sup>31</sup>

## Consultation responses and our further proposals

- 3.10 We sought and have received stakeholders' views on the proposed scope of the minimum standards condition. Respondents' comments are summarised by topic in this Section.<sup>32</sup> This Consultation only deals with those responses relevant to our revised proposals on minimum standards. Responses on other aspects of our July proposals, including issues related to minimum standards but not directly relevant to the points under consideration in this consultation, will be addressed in the final Statement.

## Basis for minimum standards

### Summary of consultation responses

- 3.11 Sky<sup>33</sup> and [REDACTED]<sup>34</sup> 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.<sup>35</sup> The appointment lead time SLA was of particular concern for Sky and [REDACTED]. Sky argued that Ofcom should consider imposing a five day appointment lead time, a target that it worked to for its own business and which it has sought

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<sup>31</sup> See Table 10.23, Ofcom, July 2013 FAMR Consultation.

<sup>32</sup> BT submitted two responses: a response from BT Group and a response from Openreach focusing on QoS and fault rates. The BT Group response separately identified BT Retail's perspective as a retail provider and user of wholesale services supplied by Openreach. Consequently we have identified the views of each separately where appropriate.

<sup>33</sup> Page 2, Sky, *Response to the FAMR Consultation (Quality of service)*, September 2013, [http://stakeholders.ofcom.org.uk/binaries/consultations/quality-of-service/reviews/responses/Sky\\_Quality\\_of\\_Service.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/quality-of-service/reviews/responses/Sky_Quality_of_Service.pdf).

<sup>34</sup> [REDACTED].

<sup>35</sup> Page 2, Sky Response to the FAMR Consultation (Quality of Service).

unsuccessfully for some time to have Openreach offer.<sup>36</sup> [§<] suggested that Ofcom should require Openreach to reduce the appointment lead time by 2 days each year.<sup>37</sup> TalkTalk, however, cautioned that whilst shorter lead times would be better aligned with consumers' expectations, there is a risk this would generate additional costs that consumers would not be willing to pay.

### Ofcom's comments on the consultation responses

- 3.12 There was a considerable divergence of views over the appropriateness of using existing SLAs as the basis for setting the minimum standards. We accept that some Openreach customers might wish to engage in further discussions with Openreach over the appropriate standards and would prefer that any potentially revised SLAs formed the basis of the minimum standards.
- 3.13 However, we do not consider that we are in a position, absent evidence that more stringent SLA standards are required to set alternative standards. The existing SLA standards were agreed between industry and there is no clear evidence that shorter timescales are required.
- 3.14 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 to fund such a change and a low priority given to this requirement (this conclusion was supported by BT's own research).<sup>38</sup>
- 3.15 In addition, it is clear that there is no single consensus view 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.
- 3.16 While we are setting minimum standards, this 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. This does not preclude negotiated changes to the SLA, even within the period of the next Charge Control.
- 3.17 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.
- 3.18 As we set out in Annex 5, the modelling 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.
- 3.19 Accordingly, our current proposal is still to use the existing SLAs as the basis for the minimum standards.

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<sup>36</sup> Paragraph 3.10, page 10, *Ibid.*

<sup>37</sup> [§<]

<sup>38</sup> Paragraph 115, BT Group, *Response to the FAMR and July 2013 Consultations*, September 2013.

**Question 3.1:** *Do you agree that it is appropriate to use the existing SLAs as the basic standard around which to set the new minimum standards? Please provide reasoning for your answer. If you do not agree, please also give your proposed alternative.*

## Compliance by region

3.20 In the July 2013 FAMR Consultation we proposed to set minimum standards at a regional level. This would ensure that all regions would receive at least the minimum standard, rather than allowing some regions to fall below the minimum standard if the standard in other regions exceeded the minimum standards.<sup>39</sup> We therefore proposed that compliance should be assessed on a regional basis and to use the 26 regions defined by BT for forecasting purposes as well as Northern Ireland.

### Summary of consultation responses

- 3.21 All respondents, who commented on this issue, with the exception of Openreach, agreed with the need to have regional targets (see KCOM, Verizon, EE and Virgin). As Verizon noted "Such an approach would ensure BT focuses evenly and consistently on all customers irrespective of location, as well as providing clarity on customer expectations."<sup>40</sup> EE acknowledged the risk of such a target affecting costs.
- 3.22 Openreach suggested that minimum standards should be applied at the national level and set in advance. It argued that setting regional targets would significantly increase the associated costs as it would be more expensive to maintain performance in all regions simultaneously. Further, Openreach noted that, at a more detailed level, the design of a regional measure would need to recognise specific issues, such as an unexpected weather event at the end of a measurement period from which Openreach would have no time to recover. Openreach also noted that it currently reports by reference to nine GM areas which, it considered, would be more meaningful to its customers.

### Our revised proposals regarding regional targets

- 3.23 With respect to setting targets by region, we note the strong stakeholder support for this proposal. We remain concerned that setting a national target could potentially result in Openreach delivering consistently worse outcomes for competition and consumers in certain regions.
- 3.24 However, we accept the issue Openreach raises with respect to the cost and complexity of requiring compliance with a minimum standard in 26 regions. This level of granularity also creates difficulties in modelling the associated costs. We consider that there is a risk that setting the target at a too granular level could result in higher than anticipated costs.
- 3.25 BT's GM areas are well established and understood by both Openreach and its customers and have, in the past, allowed the identification of regional variations. We have therefore revised this aspect of our proposals and now propose to set minimum

<sup>39</sup> Paragraph 10.315, Ofcom, July 2013 FAMR Consultation.

<sup>40</sup> Paragraph 37, page 7, Verizon, *Response to the FAMR Consultation*, September 2013, <http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Verizon.pdf>.

standards at the level of the nine GM areas. This approach avoids the complexity associated with a more granular approach whilst being consistent with our objective of ensuring that certain areas do not experience consistently poor service quality.

- 3.26 The GM areas defined by Openreach exclude Northern Ireland. We are therefore also proposing that the minimum standards should apply to Northern Ireland. This essentially means that the number of ‘regional’ targets will be ten (nine GM areas and Northern Ireland) rather than 27.
- 3.27 Consistent with this revised proposal in relation to the application of the minimum standard, we are proposing that the KPIs also report at the GM area level. As the aim of the KPIs is to allow the monitoring of Openreach’s performance in line with the proposed minimum standards, we consider that this change is appropriate. The changes to the definition of reporting areas in respect of both the minimum standards and the KPIs are set out in Annex 15.<sup>41</sup>
- 3.28 Openreach has also suggested that the minimum standard should vary by region. We have modelled the impact of the minimum standard options on the basis of a consistent national standard and we consider that any adjustment to allowed costs would reflect this. From a policy perspective it would appear desirable to have the same target in each region to ensure consistent minimum quality of service everywhere in the UK.
- 3.29 However, we accept that there may be arguments about the technical achievability of a specific target in a given region, particularly in regions which are more exposed to events that give rise to MBORC declarations or that pose other challenges to performance, for example remoteness or more rugged terrain making accessing all locations in the area more difficult. In such circumstances it may be appropriate to allow a small variation between regions.

**Question 3.2:** *Do you agree that it is appropriate to use General Manager areas rather than forecasting regions in the minimum standards and the KPIs? Please provide reasoning for your answer. If you do not agree, please also give your proposed alternative*

**Question 3.3:** *Do you agree that it is appropriate to apply the same minimum standards to all regions? Please provide reasoning for your answer. If you do not agree, please also give your proposed alternative.*

## Determining the minimum standard

- 3.30 In the July 2013 FAMR Consultation we explained that we consider that the provision of network access on fair and reasonable terms to be critical to addressing SMP at the wholesale level, which in turn ensures the effectiveness of downstream retail competition. If service quality is below that expected by end users, this would have the potential to directly affect competition in the access markets.

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<sup>41</sup> A small number of BT exchanges (14) fall outside of the 9 General Manager regions. These exchanges are listed at the end of Revised Schedule 3 to the Notification in Part I of Annex 11 to the FAMR Notification. We will consider the appropriate treatment of these exchanges for the purpose of our final statement.

3.31 We proposed that minimum standards should apply to three measures for WLR, SMPF and MPF services:

- repair completion within SLA timescales;
- provision completion by CCD (i.e. provision completion by appointment date); and
- 12 day provision appointment availability (the proportion of appointed orders offered an appointment within 12 days).

3.32 The aim of the minimum standard as an SMP condition is to establish a baseline of service that allows the delivery of regulated products to a standard which, in our view, will not have a material detriment on competition in the market. Below we consider what this minimum standard should be. We do this by:

- establishing a bounding range for possible minimum standards (including an assessment of the technical possibilities);
- identifying and assessing the following factors which we consider are relevant in determining the appropriate minimum standard to impose on BT from within that range:
  - the impact of quality of service on competition; and
  - the cost of a given level of service quality, given the impact of cost on competition.

### **Bounding range for possible minimum standards**

3.33 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 for (at least) the key access services WLR and MPF is insufficient and gives rise to competitive concerns both between cable-based and copper-based services and between CPs using copper-based services.

3.34 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).

3.35 Determining the appropriate level for minimum standard 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 then consider what the appropriate minimum standard may be within this range by reference to factors including the impact of improving performance, achievability and also cost (given the impact of cost on competition).

### Lower bound

- 3.36 While it was clear that in 2012/13 Openreach delivered performance standards below that which was acceptable, service in 2011/12 was clearly less problematic. While service 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 was absent.
- 3.37 Accordingly, we would consider, absent other clear benchmarks, that performance in 2011/12 is an appropriate lower level for the range of the minimum standards in respect of repair completion and provision appointment availability in that we would expect any minimum standard to be no lower than Openreach's performance over that period.
- 3.38 In relation to the provision appointment 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 level for the minimum standard for this measure should be 90%, reflecting historical achievement.

### Upper bound

- 3.39 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 Media, 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. It is also clear from our analysis of consumer and SME expectations, presented in Annex 9 of the July 2013 FAMR Consultation, that end-users are very 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 A9.29 of the July 2013 FAMR Consultation, consumers and SMEs clearly identify repairs outside the period required under the SLA as unreasonable and the cause of considerable concern.
- 3.40 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, we consider that it is therefore appropriate to set the upper bound of our range for the minimum standard at the highest level of performance that Openreach can consistently achieve under the current operational processes. This is not to say that it may be appropriate to set the minimum standard at this point but it does define the upper bound of the range for such a standard.
- 3.41 In relation to the repair performance measure (repairs completed within SLA timescales) and the provision appointment completion measure (orders completed by appointment date), 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 puts the glass ceiling at 79.5% for repair and 83.7% for provision.<sup>42</sup>

- 3.42 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 we have proposed to use as measures for the minimum standards. These exclude failures caused by customers or other CPs.<sup>43</sup>
- 3.43 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.
- 3.44 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 10.0% of failures.
- 3.45 Taking these 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.
- 3.46 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.
- 3.47 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.<sup>44</sup> 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.
- 3.48 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;<sup>45</sup> and

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<sup>42</sup> Paragraphs 173-184, Openreach, Response to the FAMR and July 2013 Consultations (Quality of service), [http://stakeholders.ofcom.org.uk/binaries/consultations/fixd-access-market-reviews/responses/Openreach\\_-\\_Quality\\_of\\_Service.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixd-access-market-reviews/responses/Openreach_-_Quality_of_Service.pdf).

<sup>43</sup> 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.

<sup>44</sup> See Table 10.23, Ofcom, July 2013 FAMR Consultation.

<sup>45</sup> 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%

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- provision completion by CCD (i.e. provision appointment completion by appointment date).<sup>46</sup>

3.49 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 can be consistently achieved.

3.50 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.

3.51 Thus our range for consideration as shown in Table 3.1 below.

**Table 3.1: Ranges for minimum standards**

	Lower Bound	Upper Bound
Repair Completion within SLA Timescales (excluding MBORC)	77.7%	85%
Provision appointment completion by appointment date	90%	93%
12 day provision appointment availability	65%	100%

3.52 Having identified a bounding range of possible minimum standards, it is necessary to exercise our judgement to pick a point within that range to form the basis of our proposed 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.

### **Impact of QoS on competition and consumers**

3.53 In the July 2013 FAMR Consultation, we set out our analysis of the impact of low service quality on consumers and competition. We considered that low service quality had a direct impact on competition and that the lower the level of service quality, the greater the impact on competition.

3.54 Stakeholders supported our assessment in their responses to the July 2013 FAMR Consultation.

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<sup>46</sup> 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%.

- 3.55 Several stakeholders - BT Retail, Sky, TalkTalk and Vodafone - highlighted how problems with Openreach service quality have negative effects for customers and for an operator's business reputation (with consequences for competition and switching).
- 3.56 In terms of impact on customers, BT Retail stated that, whilst 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.<sup>47</sup> 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).<sup>48</sup>
- 3.57 In relation to the impact on operators, BT Retail stated there had been a negative effect on its business customer 'advocacy scores'<sup>49</sup> in periods when Openreach had experienced service problems.<sup>50</sup> 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.<sup>51</sup>
- 3.58 Stakeholders noted that service problems could place operators on the Openreach network at a competitive disadvantage compared to:
- Virgin Media, which Sky noted "advertises the speed at which it can connect new customers";<sup>52</sup> 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".<sup>53</sup> Furthermore, TalkTalk noted that slow provision of exchange space could protect BT Retail from LLU-based competition.<sup>54</sup>

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<sup>47</sup> Page 34, BT Group Response to the FAMR and July 2013 Consultations.

<sup>48</sup> Pages 7-8, Sky Response to the FAMR Consultation (Quality of Service).

<sup>49</sup> A BT measure of how likely customers would be to recommend BT to others.

<sup>50</sup> Paragraph 112, BT Group Response to the FAMR and July 2013 Consultations.

<sup>51</sup> Paragraph 2.12, Sky Response to the FAMR Consultation (Quality of Service).

<sup>52</sup> 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 FAMR Consultation*, September 2013, <http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/EE.pdf>.

<sup>53</sup> Page 6, Vodafone, *Response to the FAMR and July 2013 Consultations*, September 2013, <http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Vodafone.pdf>.

<sup>54</sup> Page 2, TalkTalk, *Response to the FAMR Consultation (Quality of service)*, October 2013, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/TalkTalk\\_Quality\\_of\\_Service.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/TalkTalk_Quality_of_Service.pdf).

- 3.59 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 July 2013 FAMR Consultation<sup>55</sup>. 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. 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. We believe that our proposals for minimum delivery standards for key services and for imposing a quality standard set at a higher level than Openreach's current performance are necessary to address our concerns, reducing the degree of negative effects on consumers and operators (from service quality issues) and also to improve the switching experience.
- 3.60 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. This would suggest that any consideration of the impact of QoS would push us towards the upper end of our range.

## Cost implications of minimum standards

### Respondent views

- 3.61 BT, Openreach, EE, SCS Telecom, Sky, TalkTalk, Verizon, Virgin, Vodafone and [REDACTED] commented on the cost implications of minimum standards.
- 3.62 Openreach considered that a range of factors are 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. Openreach considered that the combination of several factors beyond its control, as well as significant variability in local repair demand that cannot be accurately forecast, limits its ability to deliver repair performance beyond about 65% against the applicable repair SLAs. Openreach said that service improvements would require additional funding.<sup>56</sup>
- 3.63 Openreach explained that it had worked with consultants Ernst & Young on a 'discrete event simulation' model to explore the relationship between service performance and costs.<sup>57</sup> The model allowed Openreach to estimate the additional resources required for service quality improvements for 2011/12 and 2012/13 relative to the standard of performance achieved. Openreach considered that Ofcom should base its considerations on the 2012/13 results, as this was the most recent period for which financial data is available. The more extreme weather patterns and higher proportion of Service Level 2 faults would also be more representative of future years.<sup>58</sup> The resource estimates provided by Openreach in its consultation response have been superseded by more recent estimates (described later in this Section) and thus the earlier estimates are not described here.

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<sup>55</sup> See paragraphs A9.55 to A9.105.

<sup>56</sup> Paragraph 11, Openreach Response to the FAMR and July 2013 Consultations (Quality of Service).

<sup>57</sup> Paragraph 192, Openreach Response to the FAMR and July 2013 Consultations (Quality of Service)

<sup>58</sup> Paragraph 199, Ibid.

- 3.64 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:
- [REDACTED] argued that there is 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 is currently below the SLA, BT must be making supra-normal profits, which should invite strong regulatory intervention. Also, current service quality failings are likely to be generating substantial costs, so service improvement may be self-funding.<sup>59</sup>
  - EE considered that there is not an inherent tension between RPI-X controls and service improvements. Businesses operating in competitive markets often face pressure to reduce costs and improve service quality. It is also often the case that service quality improvements generate cost savings.<sup>60</sup>
  - SCS considered that the misalignment between service levels and market requirements is likely to be generating significant costs for Openreach, so that service improvements may be self-funding.<sup>61</sup>
  - 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.<sup>62</sup>
  - 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.<sup>63</sup>
  - Vodafone considered that Openreach is inefficient and making excessive returns. Ofcom should focus on Openreach's incentives and its inefficiency rather than on putting up charges to improve service quality.<sup>64</sup>
- 3.65 Sky, TalkTalk and Virgin 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.<sup>65 66 67</sup>

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<sup>59</sup> [REDACTED]

<sup>60</sup> Page 12, EE Response to the FAMR Consultation

<sup>61</sup> Page 4, SCS, *Response to the FAMR Consultation*, September 2013

[http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/SCS\\_Telecom.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/SCS_Telecom.pdf).

<sup>62</sup> Paragraphs 3.25-3.27, Sky Response to the FAMR Consultation (Quality of Service)

<sup>63</sup> Paragraph 36, Verizon Response to the FAMR Consultation

<sup>64</sup> Pages 18-19, Vodafone Response to the FAMR and July 2013 Consultations.

<sup>65</sup> Paragraphs 3.27 to 3.28, Sky Response to the FAMR Consultation (Quality of Service).

<sup>66</sup> Paragraph 51, TalkTalk Response to the FAMR Consultation (Quality of Service).

## Ofcom's comments on the Consultation responses

- 3.66 As we set out in the July 2013 FAMR Consultation,<sup>68</sup> contractual SLA/SLG obligations and pressure from external and BT internal stakeholders do not appear to have incentivised Openreach to maintain an appropriate standard of performance. Accordingly, we considered that there was a case for imposing minimum standards to address these concerns.
- 3.67 We consider that we need to recognise as part of Openreach's operational costs calculated in the Charge Control any additional costs that we calculate occur as a consequence of imposing minimum standards. This means we will need to adjust the base year cost for the Charge Control. Equally, 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. Equally, we 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 our overall efficiency estimates.
- 3.68 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 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 business.
- 3.69 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.
- 3.70 We address stakeholder concerns about the need for transparency considering the evidence for cost changes below.

## Cost estimates based on the Resource Simulation Model outputs

- 3.71 The cost of the service has a direct impact on competition and therefore must be a consideration in setting any standard.
- 3.72 We have investigated the Resource Simulation Model 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. We have set out our consideration of the Resource Simulation Model and the resource estimates produced by it in Annex 5.

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<sup>67</sup> Page 15, Virgin, *Response to the FAMR Consultation*, September 2013, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Virgin\\_Media.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Virgin_Media.pdf).

<sup>68</sup> See paragraphs 10.291 to 10.300, Ofcom, July 2013 FAMR Consultation.

- 3.73 Our overall assessment is that the Resource Simulation Model has been partially successful in simulating Openreach's operations. The simulation approach adopted, whilst reasonable, has not coped well with the large drop in performance observed in 2012/13. Consequently we consider that the 2012/13 model results are not reliable and are not therefore suitable for use as an input to our Charge Control models.
- 3.74 For the reasons set out in Annex 5, our view is that the 2011/12 resource estimates provides us with a reasonable basis to assess the resource increments and therefore the price impacts associated with the imposition of minimum standards.
- 3.75 However, we are conscious of the risk of underestimation of the resource requirements of more difficult years. We consider that this may be addressed through the adoption of an MBORC allowance based on the more challenging 2012/13 outcomes (see paragraphs 3.97-3.105). We would also welcome the views of stakeholders as to whether it is appropriate to also take account of the difference in the resource levels between 2011/12 and 2012/13 in setting the final resource multiple to account for the more challenging conditions in 2012/13.

**Question 3.4:** *We have set out the details of our analysis in Annex 5. In light of this analysis, do you agree that the 2011/12 resource deltas from the Resource Simulation Model provide a reasonable basis to assess the resource and associated cost increments associated with minimum standards? Please provide reasoning for your answer.*

**Question 3.5:** *Do you consider whether it is appropriate to take account of the difference in the resource levels between 2011/12 and 2012/13 in setting the final resource multiple to account for the more challenging conditions in 2012/13? Please provide reasoning for your answer.*

- 3.76 Table 3.2 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<sup>69</sup> to uplift the 2012/13 baseline engineering service cost data, including pay and non pay items. Further detail on the modelling approach used is set out in paragraphs A12.13 to A12.17 in Annex 12.
- 3.77 We have explicitly modelled changes to QoS for appointment availability and for repairs. We have not modelled any change to provision appointment completion as completion rates are already consistently at or near the technical maximum.
- 3.78 We modelled a range of options but for the sake of simplicity we have set out the resource and cost impacts of three scenarios, when the performance targets for appointment availability and repairs were either 75% / 75%, 80% / 80% or 85% / 85% of SLAs.

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<sup>69</sup> See Table A5.5, Annex 5.

**Table 3.2: Illustrative Resource impact of options for minimum standards on 2016/17 unit costs (FAC)**

Minimum Standard	12 Day Provision Appointment Availability SLA / Repair Completion within SLA Timescales (excluding MBORC) – both at current provision appointment completion levels		
	75% / 75%	80% / 80%	85% / 85%
Resource Uplift	2.2%	3.9%	8.1%
MPF Rental	£0.20	£0.36	£0.75
WLR Rental	£0.18	£0.32	£0.66
SMPF Rental	£0.02	£0.04	£0.08
WLR Connection	£0.22	£0.39	£0.81
MPF Connection	£0.26	£0.46	£0.96
SMPF Connection	£0.17	£0.31	£0.64

Source: Ofcom

## Proposal for the minimum standard

### Repair completion and provision appointment availability

- 3.79 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 both between BT and other operations and the potential risk of copper-based CPs being at a permanent disadvantage to Virgin Media due to the reputation of copper services.
- 3.80 Accordingly, for the reasons set out above, we consider that an appropriate minimum standard should be towards the upper end of our range.
- 3.81 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.

- 3.82 Finally, there is the question of the cost of a given standard. The cost of services are a critical factor in competition and it would not be appropriate to set a standard which demands resource levels such that they risk significantly increasing the cost associated with the provision of those services and undermining demand.
- 3.83 On this basis, we consider that it is appropriate to set the minimum standard towards the top of the ranges set out above, provided that we do not consider that the cost of doing is disproportionate.
- 3.84 On balance, our proposal is that a minimum standard of 80% for repair and 80% for provision appointment availability strikes an appropriate balance because it would impose 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 would have a relatively small impact on connection and rentals costs in absolute terms. The evidence from our analysis suggests that a movement to higher level (for example as illustrated 85% / 85%) leads to substantially higher costs and, on the basis of evidence from Openreach, an increased risk of breaching the minimum standard.
- 3.85 We consider that this is a proportionate response to the evidence on QoS and the impact of service changes. Further, given that we are proposing to allow BT to recover the costs associated with these minimum standards through the Charge Control, we consider that the impact on BT should be neutral.

#### Provision appointment completion

- 3.86 In relation to the provision appointment completion measure (i.e. completion of provision to CCD), we propose that the minimum standard should be set at 90%.
- 3.87 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.
- 3.88 We do not consider that this standard should have any impact on costs, given that it is achievable at the current resource level. Sky has suggested that the minimum standard for provision completion should apply to a measure that takes ELF's into account in order to provide BT with an incentive to control the incidence of ELF's.<sup>70</sup> We do not consider this is appropriate, as this is related to a standard for faults rather than simply service delivery. We are considering fault levels in Section 5.
- 3.89 We will now go on to consider how we should allow for force majeure in these standards.

### **Inclusion of force majeure affected services in the minimum standards**

- 3.90 In the July 2013 FAMR Consultation we considered whether faults and provisioning orders affected by Openreach's force majeure, or MBORC, declarations should be included or excluded from the minimum standard. We considered that including faults

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<sup>70</sup> Paragraph 3.44, Sky Response to the FAMR Consultation (Quality of Service).

and orders affected by these events would have good incentive properties and would make compliance obligations more straightforward. We therefore proposed that the minimum standards should include a reasonable allowance for force majeure events.

- 3.91 We said that we were seeking further information on the number of MBORC affected faults and orders before proposing the size of the force majeure allowance.<sup>71</sup>

### Summary of consultation responses

- 3.92 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.
- 3.93 For example, KCOM stated that *"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."*<sup>72</sup>
- 3.94 Some stakeholders, such as Verizon, were concerned that existing levels of MBORC declarations may be inflated already and that their inclusion could permanently reduce the effectiveness of the measure.
- 3.95 Many stakeholders considered that BT's use of MBORC would benefit from greater scrutiny and review. We will consider these arguments in the final Statement.
- 3.96 Openreach considered that MBORCs are 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.

### Ofcom's comments on the Consultation responses and proposals

- 3.97 We appreciate the concern of stakeholders that past levels of MBORC declarations may have been inflated by tactical declarations. We have, however, found no clear evidence of such behaviour. We requested information on the impact of MBORC declarations from BT using our statutory information gathering powers<sup>73</sup> and sought further subsequent clarification.<sup>74</sup>
- 3.98 The results are set out in Table 3.3 below.

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<sup>71</sup> Paragraphs 10.312-10.313, 10.323, Ofcom, July 2013 FAMR Consultation.

<sup>72</sup> Paragraph 4, page 14, KCOM, *Response to the FAMR Consultation*, September 2013, <http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/KCOM.pdf>.

<sup>73</sup> Second QoS information request of 23 May 2013 addressed to and received from British Telecommunications plc.

<sup>74</sup> BT presentation to the OTA, 2 May 2013.

**Table 3.3 MBORC impact on Repairs FY 11/12 and 12/13**

	FY 2011/12	FY 2012/13
Number of repairs affected by MBORC	1.12%	3.8%
Percentage of repairs affected by MBORC that were delivered within SLA	46.52%	33.3%

Source: Openreach

- 3.99 The impact of MBORC on repairs in 2012/13 was significantly greater than in the previous year, a trend that appears broadly consistent with the more adverse weather conditions experienced in that year.
- 3.100 We are proposing to use the historical rates of MBORC declarations that led to a failure against an SLA as a guide for the MBORC allowance to be included within the level of the proposed minimum standard.
- 3.101 As to the rate of MBORC allowance to be included in the minimum standard for repairs, we note that the available evidence indicates that a significant proportion of repairs are still delivered within the SLA target even when there is a MBORC declaration. Openreach has confirmed that it does not maintain this information for earlier periods and it is not therefore possible to examine longer term trends in relation to MBORC declarations. On the basis of the available data our proposal is to set the allowance consistent with the outcomes Openreach delivered in the more challenging of the years for which we have data, 2012/13. In this instance, MBORC declarations led to a failure against the relevant SLAs for a little above 2.5% of repairs. We consider it is appropriate to round this figure to 3% as the target the repairs.
- 3.102 With respect to provisioning, the situation is more complicated. Until October 2013, Openreach had not previously declared MBORC with respect to provisioning tasks. This changed as a consequence of the St Jude Storm. One potential reason for this is that, until more 2012/13, there was no SLA for provisioning appointments. This meant that Openreach could divert resource from provisioning to fault repair without incurring SLG out-payments. This situation may now have changed following the introduction of an SLA for provisioning appointment availability in November 2012.
- 3.103 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 has provided the following explanation as to the circumstances leading to the recent MBORC declaration for provisioning:

*“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 SOM<sup>75</sup> 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 FAD<sup>76</sup> 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. 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*

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<sup>75</sup> Senior Operational Manager

<sup>76</sup> First Available Date

*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.”<sup>77</sup>*

- 3.104 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).
- 3.105 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 a target, we are proposing to include a cautionary MBORC allowance of 1% in the standards set in relation to first available appointment and provisioning completion.

**Question 3.6:** *Do you agree that the existing MBORC statistics form a reasonable basis for inclusion in the minimum standards? Please provide reasoning for your answer. If you do not agree, please also give your proposed alternative.*

**Question 3.7:** *Do you agree that it is appropriate to base the repair MBORC allowance on the statistics for 2012/13? Please provide reasoning for your answer. If you do not agree, please also give your proposed alternative.*

**Question 3.8:** *Do you agree that it is appropriate to use 3% as the faults MBORC allowance and 1% as the provisioning MBORC allowance? Please provide reasoning for your answer. If you do not agree, please also give your proposed alternative.*

## Minimum standards conclusion and glide path

- 3.106 Finally, we have considered when the minimum standards should come into force. Our view is that Openreach should be required to meet the standards in full as soon as reasonably possible.
- 3.107 However, in setting mandatory minimum standards for the first time, we need to recognise the need for Openreach to restructure and resource in a manner that will allow them 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.
- 3.108 Accordingly, as a transitional measure, we consider it appropriate to impose somewhat lower minimum standards for the first two years.

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<sup>77</sup> Email from M Madden, Openreach, to Markham Sivak, Ofcom, 22/11/13.

Redacted for publication [X]

3.109 Since the service quality problems in 2012/13, Openreach has had time to take mitigating action, such as recruiting additional staff, and we would therefore expect that Openreach could achieve better performance if similarly challenging conditions were to occur in the first year of the Charge Control. On this basis, we are minded 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, the latter being the lower end of the range discussed earlier in this Section. The ranges are therefore:

- Repair 63% to 77.7%; and
- 12 day provision appointment availability 42% to 65%.

3.110 Our initial view is that targets roughly in the middle of this range would be appropriate and we are therefore minded to set the minimum standard at 70% for repair and 55% for provision appointment availability in the first year. We would welcome comments on this proposal.

3.111 With respect to the second year, we have provisionally proposed that the minimum standards should be set at the midpoint between the first and third year standards.

3.112 We do not consider that a transitional target is necessary for the provision appointment completion measure as the minimum standard is in line with the lowest average annual performance observed in the last four years.

3.113 While we are setting standards below that which we consider appropriate for these services in recognition of the need to allow for transition, we would expect Openreach 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).

3.114 Table 3.4 below sets out the proposed targets for each of the three years excluding the MBORC allowance that we have discussed above. These standards represent our base case proposal.

**Table 3.4: Proposed minimum standards (excluding the MBORC allowances)**

Minimum standard	First Year Range for consultation and in brackets our proposal	Second Year	Final Year
Repair completion within SLA timescales	63%-78% (70%)	71%-79% (75%)	80%
12 day provision appointment availability	42%-65% (55%)	61%-72% (68%)	80%
Provision appointment completion by appointment date	90%	90%	90%

3.115 Table 3.5 below shows the minimum standards after the inclusion of the MBORC allowances.

**Table 3.5: Proposed minimum standards (including the MBORC allowances)**

Minimum standard	MBORC allowance	First Year	Second Year	Final Year
Repair completion within SLA timescales	3%	60%-75% (67%)	68%-76% (72%)	77%
12 day provision appointment availability	1%	41%-64% (54%)	60%-71% (67%)	79%
Provision appointment completion by appointment date	1%	89%	89%	89%

3.116 Below we set out the impact of this base case on unit costs. The impact on overall prices is also set out in Table 8.4 of Section 8 (referred to as “QoS adjustment”).

**Table 3.6: Impact of proposed minimum standard on 2016/17 unit costs (FAC)**

	Cost
Resource Uplift	3.9%
MPF Rental	£0.36
WLR Rental	£0.32
SMPF Rental	£0.04
WLR Connection	£0.39
MPF Connection	£0.46
SMPF Connection	£0.31

Source: Ofcom

3.117 For the purposes of this Consultation we have also included an upper range scenario in our sensitivity analysis in Table 8.5 in Section 8 (referred to as “High QoS Adjustment”). We consider that this is appropriately based on delivering next available appointment to SLA 85% of occasions (excluding MBORC) and repairs to SLA on 85% of occasions (excluding MBORC) which equates to an 8.1% resource uplift.

**Question 3.9:** Do you agree with the minimum standards we have proposed for the third year? Please provide reasoning for your answer.

**Question 3.10:** Do you agree with the range we have identified for the minimum standard in the first year and our proposed recommendation within that range? Please provide reasoning for your answer.

**Question 3.11:** Do you agree with the proposed glide path? Please provide reasoning for your answer.

## Ensuring that the all services are delivered within a reasonable period

3.118 In the July 2013 FAMR Consultation we proposed a new KPI intended to give some indication of the distribution on repairs over time. The aim was to understand and monitor the ‘tail’ i.e. the number of repairs that take place outside the SLA period. We defined this KPI in the following terms:

“Timing of fault repairs

The percentage of Faults during the Reporting Period that achieved a Restored Service on each of the first ten days from the date on which the Fault was validated and registered on the Dominant Provider’s operational support system.”<sup>78</sup>

3.119 However, since the July 2013 FAMR Consultation we have further considered the potential for gaming and the incentives inherent in the minimum standards we are proposing to introduce.

3.120 One key concern is the risk that the imposition of minimum standards may incentivise BT to focus on the delivery of services up to the target percentage, but to de-prioritise that repair when it becomes clear that a service will not be delivered within the SLA period. Put another way, there is a risk that BT might invest resources in meeting repairs within the SLA target (and which therefore contribute towards compliance with the minimum standard) to the detriment of repairs that are already outside the SLA.

3.121 We consider that the existence of contractual SLGs will, to some extent, mitigate the potential for this effect. While we are concerned that SLGs alone do not have sufficient performance incentive effects, we consider that the existence of the proposed new minimum standards will act to enhance the effectiveness of SLGs to drive behaviour. Our view is that while SLG payments on their own are not necessarily sufficient to minimise the risk of Openreach trading the cost of resourcing adequately against the payment of customer SLGs, the requirement for minimum standards should result in Openreach being resourced to a level where it would not be able to offset labour costs savings against customer compensation.

3.122 However, we are not complacent about the risk of prolonged tails for tasks that fail to be delivered within the SLA timeframe.

3.123 Firstly we invite Openreach to respond to this Consultation with their own targets for the delivery of the ‘tail’. We would expect such targets to provide reassurance to end-consumers as to what a reasonable maximum expectation of time for a line to be repaired or provisioned, aside from exceptional cases.

3.124 Further, we are therefore proposing that it would be appropriate to monitor the ‘tail’ of repairs and provisioning to ensure that there is no unintended consequences arising from our proposals to impose minimum standards.

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<sup>78</sup> Annex 11, July 2013 FAMR Consultation

- 3.125 In the event that we do observe a change in the expected 'tail' - e.g. a clustering of late delivery away from the SLA date rather than a steady decline in task completion 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 appropriate to make a direction under SMP Condition 12 specifying additional minimum standards in respect of the repair and/or provisioning tail.
- 3.126 Therefore, we propose additional KPIs to monitor the tail. Openreach currently tracks tails for provisioning and repairs on a +1, +5, +10 and +30 days basis - that is SLA+X days. Furthermore, given the importance of public confidence in these measures, we consider that these KPIs should form part of the set of monthly KPIs made publicly available. We do not consider that these KPIs need to be provided for each GM area: it should be sufficient to present them nationally for this purpose. We also propose to remove the previously proposed KPI 'timing of fault repair' discussed above, as this will now be redundant. In order to ensure that the scale of 'tail' is understood we will also require Openreach to publish the total number of faults, requests for provisioning appointments and provisioning appointments scheduled.
- 3.127 Given the complexity of such KPIs we propose to discuss with Openreach as to how such KPIs are presented in the public domain.
- 3.128 The formal notification of these proposals in respect of KPIs is in Annex 15.
- 3.129 We note that stakeholders have raised other concerns around the exact wording and the scope of some of the KPIs. We have not addressed these points in this Consultation, but we will review those comments and engage with stakeholders as appropriate before reaching a final decision next year.

**Question 3.12:** *Do you agree with our analysis of the risks of unintended consequences in the setting of the minimum standards and our proposed approach to addressing the risk, including the use of new KPIs? Please provide reasoning for your answer. If you do not agree, please also give your proposed alternative.*

**Question 3.13:** *Do you agree with the set of KPIs proposed? Is it sufficient that they are national rather than regional? Do you agree they should be publically available? Please provide reasoning for your answer. If you do not agree, please also give your proposed alternative.*

## Section 4

# Service Level cost differentials

## Introduction

- 4.1 In this Section we set out for Consultation our revised proposals on the relative difference in costs which result from services having different Service Levels between the charge controlled WLR and MPF services. In particular, we do so by reference to new evidence submitted by BT on the cost of repairing MPF and WLR premium services compared with the cost of repairing WLR basic services. This issue arises because MPF and WLR premium services have a more stringent contractual repair Service Level, where reported faults must be completed by the end of the next working day (including Saturdays) compared to WLR, where reported faults must be completed by the end of the second working day (excluding Saturdays). We refer to these services as Service Level 2 and Service Level 1 respectively. While Openreach also offers Service Levels other than 1 and 2, we are only focusing on Service Level 1 and Service Level 2 in this Consultation.
- 4.2 In light of this evidence and our own further analysis we are proposing to change our service cost allocations such that a higher proportion of costs are allocated to Service Level 2 products compared to Service Level 1 products than in the present model. In particular we propose to set allocation rates such that Service Level 2 services will be allocated 14.1% more costs than Service Level 1.

## Charge background to our July 2013 Consultation proposals

- 4.3 In the July 2013 Consultation, we explained that we considered it appropriate to allocate a higher proportion of repair costs to MPF and WLR premium than to WLR basic on the basis that MPF and WLR premium services have higher repair Service Levels.<sup>79</sup> The difference between the Service Levels that apply to these products is that:
- MPF and WLR premium are offered with Service Level 2, which requires BT to repair faults by the end of the next working day after they are reported (where working days are Monday to Saturday); and
  - WLR basic is offered with Service Level 1, which requires BT to repair faults by the end of the second working day after they are reported (where working days are Monday to Friday).
- 4.4 BT had proposed that this difference should be 20% and had reflected this in their RFS. This was a significant increase against the allocation in the 2012 Charge Control.
- 4.5 We noted that this issue had been the subject of one of the Competition Commission's findings in the 2012 Charge Control appeal. We explained during the appeal that, at the time of the July 2013 Consultation, we had not received further

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<sup>79</sup> Paragraphs A13.122-A13.149, Ofcom, July 2013 Consultation

evidence from BT which would justify a change to the overall methodology used to calculate the Service Level differential.

- 4.6 By the time of the July 2013 Consultation, we did not consider that the situation had changed. In the absence of further robust evidence, we proposed to estimate the service differential using the methodology established in 2009 and used in the 2012 Charge Control. The calculation had been refreshed in 2010/11 and we considered that it remained appropriate for adjusting the base year 2011/12 allocations in the RFS.
- 4.7 This led us to propose the usage factors shown in Table 4.1 below for E-side and D-side copper current components in the Cost Model.

**Table 4.1: July 2013 Consultations Proposed allocations for E-side and D-side copper current**

	WLR Basic rentals	MPF rentals	SMPF rentals
Fault rate allocation	1.0	1.04	0.16
Service Level allocation	1.0	1.054	1.054
Combined usage factor used in modelling <sup>80</sup>	1.0	1.10	0.17

- 4.8 In the July 2013 Consultation we explained that, during the course of our ongoing analysis of QoS and fault rates, we intended to give further consideration to the cost differential between Service Level 1 and Service Level 2. This Section sets out this further analysis.

## Summary of consultation responses

- 4.9 Only BT Group and Openreach commented on the Service Level cost differential.<sup>81</sup>
- 4.10 BT Group stated that the differential in repair timescales between WLR and MPF is a key issue for BT Retail. The longer Service Level 1 timescale offered as standard with WLR put BT Retail at a competitive disadvantage to CPs using MPF, it argued, which is offered with Service Level 2 as standard. BT Group presented research which, it said, showed that levels of customer dissatisfaction with repair service are significantly higher for Service Level 1 (the standard offering for WLR services) than Service Level 2 (the standard offering for MPF services) at [REDACTED] compared with [REDACTED].<sup>82</sup>
- 4.11 BT Retail also stated that it understood Ofcom's position that CPs should choose the Service Level that is most suitable for their requirements. However, it did not believe

<sup>80</sup> The combined usage factor is calculated as the fault rate allocation multiplied by the service level allocation.

<sup>81</sup> BT submitted two responses: a response from BT Group and a response from Openreach focusing on QoS and fault rates. The BT Group response separately identified BT Retail's perspective as a retail provider and user of wholesale services supplied by Openreach. Consequently we have identified the views of each separately where appropriate.

<sup>82</sup> Paragraph 118, BT Group Response to the FAMR and July 2013 Consultations

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that the cost differential between Service Level 1 and Service Level 2 currently specified and proposed is sufficiently high, or reflective of the impact of increased MPF volumes and the associated need to repair faults by the end of the next working day. Unless the cost differential increased substantially, Openreach would not be able to allocate sufficient resources to cope with additional demand for Service Level 2 repairs and CPs using WLR would not be able to choose Service Level 2 repair as Ofcom proposed.<sup>83</sup>

- 4.12 BT Group argued that “the knock-on impacts on Openreach resource costs resulting from the growth of MPF volumes and the challenges of the end-of- next working day fault repair target mean that any extra demand for improved care (service) levels on WLR are unlikely to be achievable without a big step change”. BT said that Ofcom should undertake further analysis of the cost/service trade off as part of its next Consultation.<sup>84</sup>
- 4.13 Openreach further stated that the growing proportion of Service Level 2 services is increasing its repair costs, which must be taken into account in the Charge Control. Openreach said that this would also have an impact on the cost of any minimum standard that may be imposed for repairs. Openreach explained that it had worked with consultants Ernst & Young on a ‘discrete event simulation’ model to explore the relationship between service performance and costs.<sup>85</sup> We discuss this model (the Resource Simulation Model) in more detail in Annex 5. The model allowed Openreach to estimate the additional resources required for service quality improvements and for changes in the Service Level mix for 2011/12 and 2012/13 relative to the standard of performance achieved. Openreach considered that Ofcom should base its considerations on the 2012/13 results as it is the most recent period for which financial data is available. The more extreme weather patterns and higher proportion of Service Level 2 faults would also be more representative of future years.<sup>86</sup> The resource estimates provided by Openreach in its Consultation response have been superseded by more recent estimates which are discussed below.

## Ofcom’s comments on the consultation responses

- 4.14 We considered BT’s concern that the longer timescale for repairs under Service Level 1 for WLR puts it at a disadvantage relative to its competitors who make use of MPF with Service Level 2.
- 4.15 We observed that BT Retail does have the option to offer WLR at Service Level 2 to its customers. However, as set out in the July 2013 Consultation, we agree in principle with BT that the cost of repairs between Service Level 1 and Service Level 2 should be reflected in the respective wholesale charges. This would ensure that the level of demand for the different Service Levels is efficient (noting that MPF customers may wish to seek a variant of MPF with a lower Service Level).
- 4.16 In the remainder of this Section we consider BT Group’s argument that the cost differential currently used is too low and whether the Resource Simulation Model

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<sup>83</sup> Paragraph 119, Ibid.

<sup>84</sup> Paragraph 35, BT Group Response to the FAMR and July 2013 Consultations.

<sup>85</sup> Paragraph 192, Openreach Response to the FAMR and July 2013 Consultations (Quality of Service).

<sup>86</sup> Paragraph 199, Ibid.

could provide sufficiently robust evidence as to the appropriate differential in costs between Service Levels.

## Estimating the Service Level cost differential

- 4.17 The modelling task necessary to estimate the difference in the average cost per line incurred by Openreach in undertaking repairs under Service Levels 1 and 2 is highly complex. We have set out the reasons for our proposals in detail in the remainder of this Section and have attempted to do so in a clear and transparent manner. However, given the nature of the modelling undertaken for this exercise, some of the description is necessarily technical in nature. A more high-level description of the key issue is set out below. In Annex 5 we discuss how stakeholders can examine how the model works.
- 4.18 We understand that engineering activity is the dominant driver of costs when repairing faults. Therefore, engineering activity has been used as a proxy for costs when modelling the cost differential between different Service Levels.
- 4.19 We consider that the engineering activity associated with actually repairing a fault will be the same irrespective of whether the product is sold with Service Level 1 or Service Level 2. However, the higher the Service Level, the less flexibility Openreach has as to the timing of the repair. By way of example, if a substantial number of faults arose on Monday, under Service Level 2 Openreach would be obliged to undertake a repair by the end of the following working day to meet its contractual obligations.<sup>87</sup> This means that a substantial peak of resources would occur on the Tuesday. However, if these repairs could be completed under Service Level 1 (which requires repair by the end of the second working day), the peak that would otherwise occur on Tuesday could be reduced (or shifted) as some of these repairs could be undertaken on Wednesday. This would reduce the resources that Openreach would need to have available, as these are determined by the level of resources required at peak.<sup>88</sup> Hence the less flexibility Openreach has under Service Level 2 relative to Service Level 1, the higher the peak of resources it faces and the greater its resource availability requirements.
- 4.20 In estimating the resource differential between Service Level 1 and Service Level 2, we consider that the appropriate conceptual approach is to consider what would be the incremental resources required to undertake some repair jobs at Service Level 2 rather than at Service Level 1. In order to illustrate how this could be approached conceptually, the first step would be to estimate the required resources, expressed in Full Time Equivalents (FTEs),<sup>89</sup> if all repairs were undertaken at Service Level 1. The second step would then be to estimate the FTEs required, if a proportion of these repairs were instead undertaken at Service Level 2 (while the remainder stayed at Service Level 1). The difference between the two total levels of resources could then

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<sup>87</sup> This is an example used for illustration. In reality, under the 80% minimum standard proposed in Section 3, Openreach would not have to undertake all these jobs by end of Tuesday.

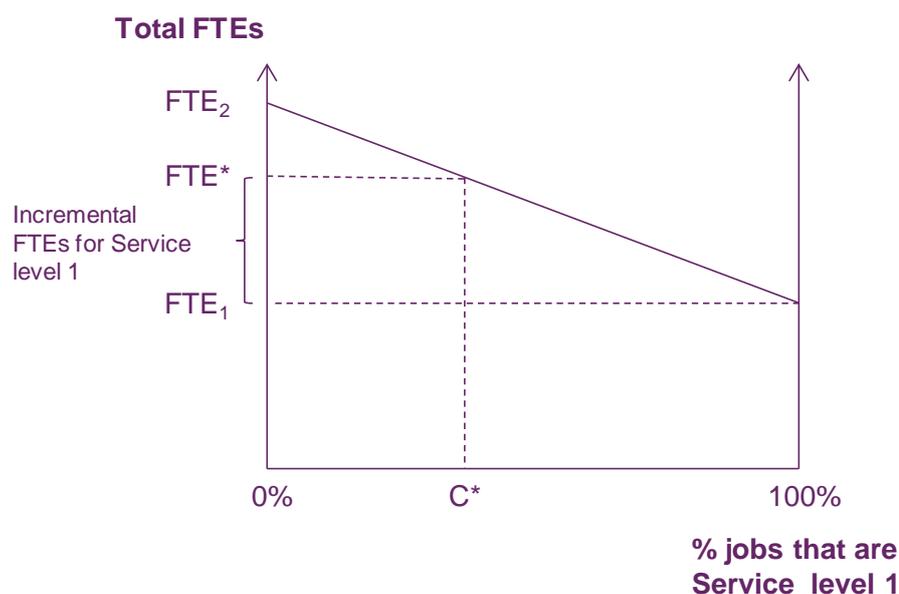
<sup>88</sup> This would be the case if Openreach's resources consisted of full time employees. However, even if Openreach made use of temporary contractual resources to cover peaks in demand, we understand that such resources would be more expensive. Hence, in terms of cost, there may be not much difference in considering whether repairs are undertaken only by Openreach's employees or also by some contractors.

<sup>89</sup> An FTE is a measure of resources or work, defined by reference to the capacity of a full time employee. An FTE of 1 is equivalent to one full time employee.

be interpreted as the incremental FTEs required by the introduction of the proportion of repairs moving from Service Level 1 to Service Level 2.

- 4.21 This is illustrated in Figure 4.1. If all repairs were undertaken at Service Level 1, Openreach would require a level of FTEs equivalent to  $FTE_1$ .<sup>90</sup> However, if the proportion of Service Level 1 repair jobs was only  $C^*$  and the remainder of repairs were undertaken at Service Level 2, the FTEs required would be higher and, in this illustration, equivalent to  $FTE^*$ . The difference between  $FTE^*$  and  $FTE_1$  would indicate the incremental overall FTEs required to undertake a proportion  $C^*$  of repairs at Service Level 2 instead of Service Level 1.

**Figure 4.1: Impact of undertaking a proportion ( $C^*$ ) of repair jobs at Service Level 2**



- 4.22 Given the linear relationship between the total FTEs and the proportion of repairs that are undertaken at Service Level 1 in the illustrative example in Figure 4.1, the gradient<sup>91</sup> of the line in Figure 4.1 expresses the percentage constant resource differential per job between undertaking repairs at Service Level 2 rather than Service Level 1.<sup>92</sup>

- 4.23 The adjustments that Openreach made to the Resource Simulation Model are an attempt to implement this conceptual approach. In the next sections we describe the adjustments made by Openreach, assess their validity and conclude as to whether the results are sufficiently robust such that (with any appropriate modifications) they can be relied upon.

<sup>90</sup> This assumes that to undertake a repair under Service Level 1 would require fewer resources than if the same repair was undertaken at Service Level 2.

<sup>91</sup> The gradient is defined as the change in the vertical axis and the change in the horizontal axis. Given that the relationship shown in Figure 4.1 is linear the gradient remains constant irrespective of the proportion of repairs at Service Level 1.

<sup>92</sup> If the relationship were not linear the average resource difference per job would change as the proportion of Service Level 1 repair jobs changes.

## New Openreach resource differential estimates

- 4.24 Openreach has modified and used the Resource Simulation Model discussed in Annex 5 to explore the resource differential (expressed in FTEs) between Service Level 1 fault repairs and Service Level 2 fault repairs (referred to below as 'Service Level resource differential'). The Resource Simulation Model incorporates functionality to vary the mix of Service Level 1 and Service Level 2 services across the full range (i.e. from 0 to 100% of either Service Level) and to assess the impact on resource levels.
- 4.25 We consider that this approach is a substantial improvement on previous submissions by BT Group on the service differential, as the dataset on which it is based can potentially be used to understand real world cost differentials.
- 4.26 However, as discussed in Annex 5, we note that the Resource Simulation Model was not originally built for the purpose of estimating the cost differential, but was subsequently adjusted for use in addressing this question. It is also important to bear in mind that the Resource Simulation Model compares overall resource levels under different mixes of Service Level. This is an approximation, as several resources are required for repair jobs (technicians' time, tools, vans spare parts etc.).<sup>93</sup> Furthermore, for the purposes of assessing whether there is a cost differential between Service Level 1 and 2 repairs, ideally one would need to translate resources into costs. Therefore, any value obtained from estimating the Service Level resource differential could be interpreted as a proxy for a cost differential and not a precise estimate.
- 4.27 Openreach used its model to estimate the resource differentials for a range of service mixes and for three levels of performance against the repair SLAs. Following a number of discussions with Ofcom, Openreach estimated the resources required under different mixes.<sup>94</sup> On the basis of these estimates, the Resource Simulation Model suggests that the difference between the average resources required for repairs under Service Level 1 and 2 does not depend on the Service Level mix. For example, for a given performance target (e.g. 80%) the average resource differential per repair is constant regardless of whether there is a single Service Level 2 repair or where 50% of repairs are undertaken at Service Level 2.
- 4.28 Table 4.2 below presents Openreach's estimates for different performance targets and different years.

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<sup>93</sup> The mix of resources will also depend on the type of repair job.

<sup>94</sup> For example, for the 2011/12 year Openreach estimated the total FTEs required the proportion of Service Level 1 were 100, 60, 55, 48, 35 and 0 per cent.

**Table 4.2: Openreach's Service Level resource differential estimates from the Resource Simulation Model**

Repair performance target (% complete within Service Level timescale)	Resource differential between Service Levels 1 and Service Level 2	
	2011/12	2012/13
75%	23.1%	15.1%
80%	23%	19%
85%	20.3%	24%

Source: Openreach.

- 4.29 According to Openreach, the model results indicate that the Service Level resource difference between Service Level 1 and Service Level 2 repairs is “approximately 20%.”<sup>95</sup> The estimated Service Level resource differential varies depending on the level of the overall performance target and the year, as shown in Table 4.2. For the reasons discussed in Section 3, we consider that the appropriate base year to use for the purposes of this analysis is 2011/12.<sup>96</sup> In addition, using an 80% performance target (see Section 3) the Resource Simulation Model estimates a constant resource differential of 23% between undertaking a Service Level 1 and Service Level 2 repair. We understand that this is the Service Level cost differential Openreach suggests exist between Service Level 1 and Service Level 2 repairs.

### Analysys Mason's review of Openreach's estimates

- 4.30 We commissioned Analysys Mason (AM) to review Openreach's Service Level resource differential estimates as part of its wider review of the Resource Simulation Model. We provide further details of AM's review in Annex 5 as well as on the steps that we have taken to provide transparency to stakeholders about the model.
- 4.31 AM found that, in relation to the Service Level differential estimates, the model operated as described by Openreach and it was able to reproduce Openreach's estimates. However, AM raised concerns about several changes to the modelling methodology used to derive the Service Level resource differential compared with that used for the performance improvement resource differentials. It considered that these may not be fully justified and in some cases might affect the results. In particular, AM identified the following adjustments made by Openreach to the Resource Simulation Model in order to identify the resource differential in delivering different Service Levels:
- made use of a 'Top 10' resource re-distribution algorithm (instead of the 'Maximum Day' resource re-distribution algorithm used elsewhere in the Resource Simulation Model);
  - revised the Gamma distribution parameters to align the peaks of the Gamma distributions used for Service Level 1 and Service Level 2 fault completions;

<sup>95</sup> Openreach, *Openreach Service Cost Modelling*, presentation, 4 October 2013.

<sup>96</sup> We note that Openreach's Resource Simulation Model estimates the resource differential to increase with the performance target in 2012/13 but to decrease in 2011/12.

- removed all provision jobs from the input data when running the simulation to assess Service Level differentials; and
- excluded Saturday working for Service Level 2 faults.

4.32 We explain the changes to the model and implications in more detail below.

4.33 On the basis of the concerns it had raised, we asked AM to run the Resource Simulation Model with a different set of assumptions to the ones used by Openreach. In order to limit the number of scenarios required, we asked AM to base its analysis on our proposed base case scenario for the proposed minimum standard, namely using 2011/12 as a base year and an 80% performance target. The adjustments we asked AM to consider were as follows:

- estimate the Service Level resource differential under a 'Maximum day' assumption (used in the Resource Simulation Model for the performance target question) and a 'Top 10' assumption (used solely for the resource differential question);
- for each of the above assumptions we also asked AM to estimate the results by:
  - using the Gamma distribution assumptions used in the Resource Simulation Model for performance improvement resource estimates and the adjusted Gamma distributions used for the resource differential question;
  - including and excluding provisions; and
  - including and excluding Saturday working for Service Level 2.

4.34 We asked AM also to provide the estimates for a number of combinations of the above assumptions.

4.35 We also asked Openreach to undertake the same exercise. Openreach expressed a number of "serious concerns" related to the validity of some of the additional scenarios with the changes in assumptions described in paragraph 4.32.<sup>97</sup> Openreach also observed that when Ofcom asked for these adjustments in the assumptions used in its model, Ofcom was at a very late stage in the process prior to this Consultation and had left little scope for debate about the robustness and validity of the results before we decided whether or not to publish them. We have set out the concerns identified by Openreach below. In particular, Openreach observed that:

4.35.1 The results of Ofcom's request to AM would not represent Openreach's view of the additional resources required by Openreach. It considered that applying the Resource Simulation Model in this way did not reflect a considered view of the expected resource impact for Openreach. As a result, it argued that this approach would result in Ofcom applying the Resource Simulation Model in a way that did not reflect a real operational situation. Openreach stated that, as with any modelling exercise, the Resource Simulation Model is not a perfect representation of Openreach's operations but it does allow changes in key variables to be tested if the Resource Simulation Model is set up appropriately (i.e. it is simply not valid

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<sup>97</sup> Email from Mike Hoban (Openreach) to Markham Sivak (Ofcom), 22/11/13.

to change a variable in the Resource Simulation Model without considering what other parameters or data may need to be (or must be) changed to maintain credibility, internal consistency and also to reflect Openreach's operational situation).

- 4.35.2 Openreach further argued that some of the results produced by the Resource Simulation Model, if run in the way Ofcom had now requested, would give obviously inaccurate results. For example, the Model would indicate that Openreach needed fewer resources to provide a higher proportion of Service Level 2 repairs than it does today. Openreach argued that this is not credible, and is also not what the Resource Simulation Model suggests if it is adjusted appropriately to allow for what it considered to be a known modelling issue. Openreach observed that it had already provided an appropriate set of results to Ofcom and could not see why publishing what it considers an obviously incorrect and inappropriate output would be a reasonable thing to do at this stage of the process. It argued that this would surely risk undermining the credibility of several parties (i.e. Ofcom, Openreach, AM and EY) and confuse stakeholders.
- 4.35.3 Openreach also stated that, if we chose to undertake such an assessment it would need to be able to have its views represented clearly in the Consultation - i.e. that it does not accept that the results are presented are a credible or viable application of the Resource Simulation Model.
- 4.35.4 Openreach concluded that this request to change some of the assumptions also led it to be concerned that Ofcom and/or AM may still not have fully understood some aspects of the modelling approach, and that making reference to results produced under these different assumptions would cause confusion, possibly undermining the credibility of Ofcom's service review. Openreach said that the Resource Simulation Model will have been applied without full consideration of the internal and external consistency required and not in the way it was designed to be operated.
- 4.36 We have noted Openreach's concerns and taken them into account in reaching our provisional conclusions. We understand that the Resource Simulation Model suffers some limitations as it was not originally designed to address the issue of Service Level cost differential. However, we considered that to correctly assess the validity of the Resource Simulation Model and understand its reliability we needed to undertake some further testing under different assumptions. We understand that, to the extent that this leads to counter-intuitive results as mentioned by Openreach, this is a cause for concern. However, we consider that it is equally inappropriate to modify the assumptions used for other modelling purposes unless such changes can be carefully justified and doing so leads to more credible results. This leads us to consider that the fact that this model was not designed to address the Service Level cost differential issue is a critical consideration to factor into the weighting we give its results.
- 4.37 In the next subsections, for each assumption Openreach modified for the purposes of calculating the Service Level differentials we:
- briefly explain the different assumptions used by Openreach for the Service Level differentials;
  - report AM's initial considerations on the change of assumption;

- report the concerns that Openreach expressed in adopting different assumptions from those it had previously adopted;
- report AM's subsequent estimates and observations under the different assumptions highlighted at paragraphs 4.31 and 4.33; and
- provide our assessment.

4.38 We then provide our overall assessment of the inferences we can make from the Resource Simulation Model and results.

## Detailed assessment of each of the adjustments to the Resource Simulation Model

### Redistribution method

#### Adjustments made by Openreach to the Resource Simulation Model

4.39 As we have explained in more detail in Annex 5, the Resource Simulation Model uses a two-step approach to estimate resources. The second step, known as 'resource re-distribution' adjusts the resource estimates produced by the simulation in order to take further account of the flexibility within the skill groups to undertake other skill groups' work. The model contains two versions of the resource re-distribution calculation, referred to as the Maximum Day approach and the Top N approach (where N is a number that the user can select).<sup>98</sup>

4.40 Openreach used the Maximum Day calculation for all of the resource estimates for performance improvements. For the Service Level differential only, Openreach modified the redistribution approach and adopted a Top 10 approach (i.e. the Top N calculation where n is set to 10). This redistributes the idle resources for the Top 10 days rather the one day under the Maximum Day approach.

#### AM's initial views

4.41 AM considered that Openreach had not provided a satisfactory explanation for using the Top 10 instead of the Maximum Day approach. AM reviewed both of the redistribution calculations and concluded that the Top N calculation is not a useful measure of resources.

4.42 As a result we asked AM to run the Resource Simulation Model under both the Top 10 and the Maximum Day approaches.

#### Openreach's views on the model modifications

4.43 Openreach clarified that had it used the Top 10 approach only for the 75% repair scenarios (for both 2011/12 and 2012/13) and had used the Maximum Day approach

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<sup>98</sup> Paragraphs A5.62-A5.68, Annex 5. For a more detailed description of the resource distribution calculation see Sections 2.4, 3.3, Analysys Mason, *Quality of Service model assessment: Final Report for Ofcom*, November 2013.

for the other Service Level resource differentials. It had not fully explained this distinction in the material it had originally provided to Ofcom.<sup>99</sup>

- 4.44 Openreach did not consider this point to be problematic as Ofcom's other queries about the modelling assumptions. It explained that, in this instance, it ran a number of different scenarios using different resource redistribution approaches (e.g. Maximum Day, Top 10 etc.) but some produced less consistent results than others. Openreach argued that, for the 75% repair scenario, the Top 10 approach produced a more consistent set of results than the Maximum Day approach, albeit with slightly lower differentials. It felt that this was more useful output for both Openreach and Ofcom. In Openreach's (and EY's) view, the approach used was a robust way of estimating the resource required to increase the Service Levels. However, Openreach stated that it had reproduced the full results using the Maximum Day approach and were happy to supply it to Ofcom if required. However, Openreach would question the usefulness of adding it into the Consultation at this stage.

### AM's estimates

- 4.45 AM estimated the Service Level cost differential under the Maximum Day approach to be 17.9% instead of Openreach's 23%.

### Ofcom's views

- 4.46 We consider that Openreach has not provided a sufficiently strong justification for departing from the Maximum Day approach for the purpose of estimating the Service Level resource differential, particularly given AM's view that the Top 10 calculation is not a useful measure of resources. Therefore, we consider it more appropriate to use the Maximum Day calculation.
- 4.47 We note Openreach's argument that it had applied its approach to the 75% Service Level scenario only. As all the results obtained by AM refer to the 80% Service Level scenario, there should have been no difference between Openreach's and AM's estimates. However, AM found that there is a substantial difference between its results and Openreach's. We consider it prudent to apply a consistent approach in modelling resource impacts for different performance targets and service differentials, unless there is a clear reason for adopting different assumptions. Therefore, we considered it more appropriate to base any determinations on the Maximum Day approach. We also consider that, in the absence of a clear explanation as to why the Maximum Day estimates by AM and Openreach differ, we should rely on AM's results as an independent third party.

## **Gamma distribution**

### Adjustments made by Openreach to the Resource Simulation Model

- 4.48 In the Resource Simulation Model a gamma distribution is used to represent the waiting time of jobs in the queue prior to execution.<sup>100</sup>
- 4.49 AM noted that, for the Service Level resource differential, Openreach had made changes to the parameters used to control the shape of the gamma distribution.

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<sup>99</sup> Email from Mike Hoban (Openreach) to Markham Sivak (Ofcom), 22/11/13.

<sup>100</sup> For further details and discussion see Sections 2.3, 3.2, AM, QoS Model Report.

These changes had the effect of aligning the peak of Service Level 1 and Service Level 2. In essence, while in the Resource Simulation Model Openreach assumed that the most likely time to repair a fault was 1 day for Service Level 2 and 2 days for Service Level 1, in estimating the Service Level resource differential the changes by Openreach implied that the most likely time to repair a fault was the same irrespective of the Service Level (roughly in between 1 and 2 days).

### AM's initial views

- 4.50 AM observed that the justification given by Openreach for the change in this assumption was that this was necessary to achieve a meaningful comparison of the extreme cases and to take into account what might happen to the profiles if the extremes were realised. AM considered that it was difficult to justify this departure from the original modelling methodology. AM noted that while some changes in the distribution would be observed in extreme cases in the real world, it is much harder to justify such extreme changes for all scenarios with changes in the Service Level mix.
- 4.51 We asked AM to produce Service Level resource differentials under two separate Gamma distributions for Service Level 1 and Service Level 2.

### Openreach's views on the model modifications

- 4.52 Openreach argued that there was a need to make an additional adjustment to the underlying repair distributions when modelling the Service Level resource differential under different Service Level mixes.<sup>101</sup> Openreach argued that the key factor was that Service Level 1 repair performance peaks in the 'historic' data profiles at around two days whereas Service Level 2 jobs have a peak at approximately one day, and these different peaks are reflected in the respective Gamma distributions. As a result, Openreach considered, there is a need to amend the Gamma distributions to account for this factor. In particular, Openreach argued that for scenarios where the Service Level mix approaches the extremes (i.e. all repairs are Service Level 1 or 2) using separate Gamma distribution may overstate the resource requirements compared with the base line due to the correlation of the modes. For example, if all repairs were Service Level 1 then in practice Openreach would have greater freedom in its resourcing decisions as it would have more time to complete each repair and, hence, one would expect a lower level of required resource.
- 4.53 However, Openreach argued that using the two Gamma distributions may not reflect this outcome as by applying the unadjusted Gamma distribution for Service Level 1 to all repairs this would lead to a much higher peak on day 2 than in the baseline. As a result, Openreach has amended the Gamma distributions for Service Level 1 and Service Level 2 such that the peaks align for the baseline and scenario runs, to ensure a consistent comparison. In Openreach's view, Ofcom's approach would not reflect a reasonable view of estimated resource requirements. Openreach considered that, if the results under the two Gamma distribution assumptions were to be published in Ofcom's Consultation, they would mislead and constitute an inappropriate use of the Resource Simulation Model.

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<sup>101</sup> Email from Mike Hoban (Openreach) to Markham Sivak (Ofcom), 22/11/13.

### AM's estimates

- 4.54 AM's assessment shows that starting from the base case (i.e. the current Service Level mix) and moving to all repairs being either Service Level 1 or 2 leads to an increase in resource requirements. This is to be expected, according to AM, given that a movement away from the base case Service Level mix is in effect a move towards the peak of one of the two Gamma distributions, thereby effectively increasing total resource requirements. AM commented that it is not apparent what the cause is behind the greater increase of resources when the model assumes that all repairs are carried out at Service Level 1 rather than at Service Level 2.
- 4.55 AM noted that its additional analysis suggested there was non-linearity in the relationship which was not the case under the assumptions used by Openreach. However, it argued that if one adopted a partial approach and only examined the base case and all repairs at Service Level 2 mix (i.e. this would be valid if we expected the proportion of Service Level 2 repairs to increase over time), the Resource Simulation Model suggested a Service Level resource differential of 5.8%. AM, however, questioned how meaningful this partial approach would be.

### Ofcom's views

- 4.56 We consider that neither the methodology used by Openreach nor the change we asked AM to undertake are satisfactory ways to modelling the service care resource differential. However, we note that the estimation undertaken by AM leads to some counter-intuitive results and this raises concerns. Accordingly, in the absence of a more appropriate alternative approach we do not consider that there is compelling evidence for adopting a different approach from the one suggested by Openreach.

## **Treatment of provisions**

### Adjustments made by Openreach to the Resource Simulation Model

- 4.57 In addressing the question of the resources required to meet different performance targets, the Resource Simulation Model estimated the impact should the target be set for both provisions and repairs.
- 4.58 In estimating the Service Level resource differential, however, Openreach excluded all provisions from the Resource Simulation Model.

### AM's initial views

- 4.59 AM noted that Openreach justified removing all provisions from the input data when running the simulation to estimate the Service Level resource differentials by arguing that that this would avoid the possibility of the estimates being affected by the inclusion of provision jobs. AM considered this was a valid argument up to a point, since resource estimates are heavily influenced by the distribution of provisions. However, AM considered it to be a departure from reality that ignored the potential 'economies of scope' that arise from the same organisation undertaking both provisions and repairs. At that stage AM was unable to estimate the impact of the exclusion of provisions on the estimates.
- 4.60 As a result we asked AM to estimate the Resource Simulation Model's results under the assumption that all provisions are included.

### Openreach's views on the model modifications

- 4.61 Openreach argued that the reasons why provision jobs are excluded from the Service Level resource differential estimation are similar to those outlined in relation to the Gamma distribution.<sup>102</sup> Openreach explained that, when running these types of scenarios, there may be a need to adjust for changed degrees of synchronisation of resource peaks for different repair types (be they different products or different service tasks such as provisions and repair). Openreach argued that, to ensure there was no conflict in its own analysis, the provision jobs were removed entirely from the model to prevent any inadvertent changes to the degree of synchronisation between repairs and provisions work stacks.
- 4.62 Openreach informed us that they have since run some test scenarios on the model with both repair and provisions jobs included - but still excluding Saturday working for Service Level 2 and still amending the Gamma distribution (as discussed at paragraph 4.49). Openreach confirmed that the results were consistent with those submitted to Ofcom on 4 October 2013: the Service Level differential was estimated at about 50% of the estimated differential when provisions are excluded. This is what Openreach would have expected.
- 4.63 In Openreach's view, the model was run in a way which properly took into account the overall impact on repair resources of different Service Levels. Additionally, Openreach argued that its re-run of the Resource Simulation Model including provisions (and other appropriate adjustments) also produced a consistent set of results. Nonetheless, Openreach concluded that this would not be an appropriate or an accurate way of using its own model to estimate the Service Level resource differential. This, according to Openreach, would introduce the types of errors it noted in its concerns mentioned in relation to the Gamma distribution and Saturday working for Service Level 2 and may also affect the provision resource calculation to an unknown degree.

### AM's estimates

- 4.64 AM found that when provisions were included, a linear relationship between the resource differential and the service level was maintained. However, the Service Level resource differential that AM estimated when adding provisions was of a substantially smaller magnitude (i.e. 8.3% rather than 17.9% under the Maximum Day redistribution approach). AM noted that adding provisions roughly doubles resource requirements and, hence, a resource differential of about half would be expected.<sup>103</sup> This effect is purely due to the fact that including provisions leads to an output from the Resource Simulation Model that measures the Service Level resource differential relative to a much larger resource base. However, if this was the only effect of including provisions in the Resource Simulation Model, it meant that there was no evidence of economies of scope between repairs and provisions.

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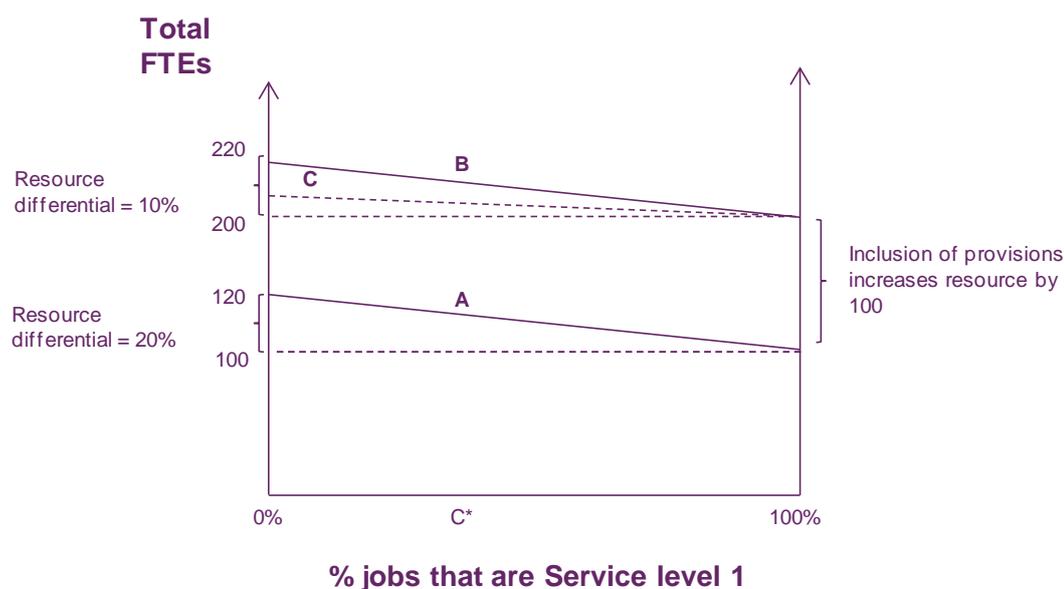
<sup>102</sup> Email from Mike Hoban (Openreach) to Markham Sivak (Ofcom), 22/11/13.

<sup>103</sup> AM also noted that the scale of the reduction in the resource requirements when all repairs are undertaken at Service Level 1 is difficult to understand. AM concluded that the latter is most likely due to the way in which the historical datasets interact, creating certain peak days.

Redacted for publication [X<]

- 4.65 To investigate this further, we asked AM to attempt to disentangle the effect of approximately doubling the resources<sup>104</sup> from the possible effect driven by economies of scope.
- 4.66 We considered that the difference between these two effects could be illustrated by the example in Figure 4.2. This shows the same relationship as depicted in Figure 4.2. For illustration, suppose that excluding provisions Openreach needed 100 resources if all repairs were at Service Level 1 and 120 if all were at Service Level 2. The resource differential would be 20 or 20% as shown by line A. Suppose now that we include provisions and that doing so increases the resources required by another 100 for both extreme Service Level mixes. The resource differential would still be 20 but in percentage terms it will be 10%, as shown by line B. This is driven purely by the increase - i.e. doubling - in the denominator by including provisions and not by any difference in the level of resources to undertake repairs at Service Level 2 relative to Service Level 1. However, if the inclusion of provisions also changed the slope or gradient of this relationship, for example as shown by line C, this would indicate that there are economies of scope between repairs and provisions and that their impact differs between Service Level 2 and Service Level 1 repairs.<sup>105</sup>

**Figure 4.2: Impact of including provisions in the Resource Simulation Model**



- 4.67 Therefore, the inclusion of provisions in the Resource Simulation Model has two effects:
- a ‘doubling effect’ driven purely by the fact that inclusion of provisions almost doubles the overall resources required; and
  - a potential ‘economies of scope’ effect.
- 4.68 AM concluded that the evidence suggested that there was an economies of scope effect. AM estimated that, when provisions are excluded, failing to take into account

<sup>104</sup> AM found that provisions consisted of 42% of all jobs (i.e. provisions and repairs).

<sup>105</sup> Line C in the illustrative example shows that economies of scope would be stronger when repairs are undertaken at Service Level 2 rather than 1.

the economies of scope led to an overestimation of the Service Level resource differential of about 21%.

### Ofcom's views

- 4.69 We consider that it is desirable to include provisions in estimating the Service Level resource differential to capture the economies of scope in undertaking both repairs and provisions from the same pool of resources. This is particularly the case if the peaks in provisions and repairs are not aligned. This means that, during an off-peak period for provision tasks, resources would become free for repairs, requiring fewer incremental resources for repairs. We agree with AM that, given economies of scope, excluding provisions could lead to an overestimation of the resources needed for repairs. We consider the doubling and the economies of scope effects separately, as set out below.
- 4.70 First, we consider the doubling effect. We understand that the inclusion of provisions would increase the overall resources across all Service Level mixes (i.e. by almost doubling it) and hence lead to a reduction of the estimated resource differential. We do not consider that it is appropriate to adjust for this as this is purely driven by the way the resource differential is estimated and does not reflect an actual resource differential between Service Level 1 and 2.
- 4.71 Second, we consider the economies of scope effect. As we are estimating the Service Level resource differential, we are interested in knowing whether the exclusion of provisions (as assumed by Openreach in the Resource Simulation Model) has an impact on the Service Level resource differential. We consider that a possible reason as to why this may be the case is that economies of scope between repairs and provisions may be more important when Openreach has less flexibility in undertaking repairs (i.e. under Service Level 2). This means that when Openreach undertakes a Service Level 2 repair, excluding provisions would fail to consider the economies of scope with provision and overestimate the resource required. As the effect is smaller for Service Level 1, excluding provisions would lead to an overestimate of the resource differential. We considered that we should adjust the Resource Simulation Model estimate for this effect.
- 4.72 Therefore, we considered that it would be appropriate to adjust the Resource Simulation Model's estimates (using the Maximum Day redistribution method – see paragraphs 4.39 to 4.47). Adjusting for this leads to a differential of approximately 14% (i.e.  $17.9\% * (1 - 21\%)$ ).

### **Saturday working for Service Level 2**

#### Adjustments made by Openreach to the Resource Simulation Model

- 4.73 In its resource estimates for performance improvements Openreach estimated the impact of assuming that Service Level 2 repairs could also be undertaken on Saturdays.
- 4.74 In estimating the Service Level resource differential, however, Openreach assumed that Saturdays could not be used to undertake Service Level 2 repairs.

### AM's initial views

- 4.75 AM noted that Openreach justified excluding Saturday working for Service Level 2 repairs because the number of employees working on Saturdays is much smaller than on weekdays and that, with scenarios with higher proportions of Service Level 2 repairs, the model would assign more jobs for Saturday execution than would be achievable in the real world. AM considered this change to be justified up to a point, but that it was also a departure from reality. It would have the effect of increasing the peak of the busiest weekday and therefore potentially overestimate the resource differentials. Nonetheless, AM considered that Saturday working and any associated additional staffing costs for Saturday working would need to be taken into account to conduct a proper analysis of the Service Level cost (rather than resource) differential.
- 4.76 We asked AM to estimate the Resource Simulation Model's results under the assumptions of including Saturday working for Service Level 2.

### Openreach's views on the model modifications

- 4.77 Openreach argued that, if the differences in Saturday working between Service Level 1 and 2 are not dealt with appropriately, then as the proportion of Service Level 2 repairs increases, this will understate the 'modelled' resource increase required simply because more repairs are being allocated to a full 'working' Saturday within the model.<sup>106</sup> This, according to Openreach, is not reflective of the real constraint on Saturday working which exists within Openreach's organisation. In practice, Openreach considered that if significantly more work was needed to be completed on Saturdays, it is likely that this would only be achievable if Openreach implemented significant organisational / working practice changes. Openreach argued that such changes would include, "for example, a major reorganisation of shift patterns to provide for much larger scale Saturday working", which it considered [REDACTED]. Hence, according to Openreach, to model a scenario which assumes "enormously increased levels of Saturday working without a consequential change in the engineering cost base and real Openreach shift patterns is not a robust way of estimating the required cost differential". In Openreach's view, presenting an estimate based on inclusion of Saturday working in the Consultation "would not reflect reality and would be very misleading, particularly if it is proposed to include such data in the consultation documents at this late stage of the process and without very careful consideration of the consequences".
- 4.78 Openreach noted that it had "previously discussed the possibility of building into the model a limitation to the level of Saturday working, but that this was rejected by both parties as potentially too time consuming" and because "it risked introducing a potential delay to the consultation". Openreach did not consider that such a change would materially alter the resource differential calculated, given that the actual level of Saturday working is a small proportion [REDACTED] of the total weekly volume. Hence, in Openreach's (and E&Y's) view, the output produced by the removal of Saturday working on both Service Level 1 and Service Level 2 repairs is a reasonable and robust way to estimate the appropriate scale of the differential between the Service Level and Ofcom should use this value in this Consultation.

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<sup>106</sup> Email from Mike Hoban (Openreach) to Markham Sivak (Ofcom), 22/11/13.

### AM's estimates

- 4.79 AM's results in including Saturday working for Service Level 2 indicate that the same relationship is maintained (i.e. Service Level 2 repairs are more resource intensive than Service Level 1), but the differential is estimated to be lower than in the case where Saturday working is excluded. This, according to AM, is logical, as now a portion of repairs would occur on Saturday thereby decreasing the peak that otherwise would have occurred on a weekday. AM also considered the possible impact in costs rather than resources by applying a scalar [X] to Saturday repairs, broadly reflecting the relative difference in wages between weekdays and Saturdays.<sup>107</sup> AM also provided us with the split in resources required at different Service Level mixes for Saturdays and weekdays. At the current Service Level mix the model estimates that Saturday resources would amount to 10% of all resources (rather than the 5% mentioned by Openreach).

### Ofcom's views

- 4.80 We consider that, in principle, excluding Saturday working for Service Level 2 would lead to an increase in the peak in resource requirements for Service Level 2 in the early part of the week (as repairs that could no longer be undertaken on Saturday will have to be undertaken the following Monday). However, we also recognise two factors countering this effect:
- 4.80.1 An increase in the proportion of Service Level 2 repairs as we change the Service Level mix could lead to an increase in the overall Saturday resource requirements. The extent to which Openreach has an incentive to undertake such repairs on Saturdays also depends on the relative premium of Saturday versus weekday working. Hence, Openreach may have limited incentives to increase repairs on Saturday if the resource cost is much higher than that required for weekday working. This is a valid concern, though we note that the whole assessment is undertaken in terms of resources rather than costs differential; and
- 4.80.2 Openreach also argued that it would face difficulties in increasing the amount of resources on Saturdays, even if it had an incentive to do so, for the reasons set out above (see paragraph 4.77). While there is some validity to this argument, we consider that if the change in Service Level mix can be forecasted (and we expect that this is the case for the relevant services) then Openreach could gradually overcome these difficulties.
- 4.81 We consider that the way the Resource Simulation Model excludes Saturday working for Service Level 2 is not entirely satisfactory, although we recognise that there might be some factors put forward by Openreach suggesting that inclusion of Saturdays may also not be appropriate. We therefore recognise that the effect of excluding Saturday working for Service Level 2 may not be material. This is because, while exclusion of Saturday's working increases the resource peak early on in the week, its inclusion would mean making use of more costly Saturday resources. In the absence of strong evidence suggesting one approach is markedly superior to another, we have not considered it appropriate to include a Saturday working assumption in the model at this stage.

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<sup>107</sup> Email from Tim Parsons (Openreach) to Markham Sivak, Paul Laker and Clive Hillier (Ofcom), 24/10/13.

## Changes in multiple assumptions

- 4.82 We have also asked AM to combine some of the assumptions discussed above to better understand the combined effect of such changes in assumptions.<sup>108</sup>
- 4.83 AM's results in combining assumptions suggest that the resource differential would become negative – i.e. on average it would be less resource intensive to undertake a repair at Service Level 2 than at Service Level 1. This result is counterintuitive, as we consider that a Service Level 2 repairs may at best require the same level of resources as a Service Level 1, but not less. In light of our preliminary conclusion that we should not amend the Resource Simulation Model's assumptions for Saturday working and Gamma distributions, we consider that it would not be appropriate to take into account any of the combinations of scenarios tested by AM in estimating the Service Level resource differential.

## Our overall assessment of the Openreach estimates

- 4.84 AM's review of the Resource Simulation Model and its estimates of the Service Level resource differential highlight some significant limitations in the approach used by Openreach to estimate the Service Level differential.
- 4.85 In view of AM's findings, we are not persuaded that all the Openreach's assumptions used in the simulation are appropriate to form a reliable estimate of Service Level resource differential.
- 4.86 Therefore, we have attempted to rectify some of the concerns raised by AM. In particular, we considered that:
- there is little justification for changing the redistribution approach from Maximum Day to Top 10. We have, therefore, only considered results under the Maximum Day approach. This suggests a resource differential of 17.9% according to AM; and
  - it would be appropriate to include provisions to ensure that the impact of economies of scope effects is considered. Modifying the Openreach proposal assumptions to include the economies of scope effect of provisions leads to a resource differential of 14.1% (combined with the Maximum Day redistribution approach).
- 4.87 We have not considered it appropriate to modify the following assumptions used in the Resource Simulation Model:
- Gamma distribution - we understand that neither the methodology used by Openreach nor the change we asked AM to undertake are a perfect proxy for modelling the service care resource differential. On the basis that AM's approach is not obviously superior to the approach taken by Openreach, we consider that it is appropriate to adopt the approach suggested by Openreach. However, we note

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<sup>108</sup> AM was asked to estimate the combined impact of using a) separate Gamma distributions and inclusion of provisions and b) the same assumptions as under a) but also including Saturday working for Service Level 2.

that the change we asked AM to undertake would lead to a much lower service care differential; and

- Saturday working - we also consider that the way the Resource Simulation Model excludes Saturday working for Service Level 2 is not entirely satisfactory. However, we recognise that the effect of such an assumption may not be material. Therefore, we have not considered inclusion of a Saturday working assumption in the model at this stage.<sup>109</sup>

## Provisional conclusions and proposals

- 4.88 The Resource Simulation Model represents a sophisticated attempt to model Service Level differentials and is a marked improvement on evidence reviewed for the purpose of previous LLU and WLR Charge Controls. While the modelling approach proposed by Openreach in assessing Service Level differentials has its limitations, we still consider that it offers a more meaningful insight into the Service Levels resource differential (as a proxy for the cost differential) than our existing estimate, such that it would be appropriate to use it for the purpose of this Charge Control in preference to reverting to the approach used for the purpose of the 2012 Charge Control.
- 4.89 Absent a clear alternative estimation base, we consider that it is appropriate to consider that the estimates derived from the Resource Simulation Model with the appropriate adjustments we have explained above - i.e. using the Maximum Day approach as the redistribution method and including provisions in so far as their effect is to allow Openreach to benefit from economies of scope between repairs and provisions are a reasonable basis for proposing an estimate of Service Level differentials.
- 4.90 Accordingly, we are proposing to use a value of 14.1% in our base case, which is the result of the Resource Simulation Model applying the two adjustments described above. Table 4.3 below sets out the base case Service Level allocations used in the cost modelling. Further detail on the cost modelling approach is set out in paragraphs A12.18 to A12.23 in Annex 12.

**Table 4.3: Service Level Allocation**

	WLR Basic Rentals	MPF Rentals	SMPF Rentals
Service Level allocation (Base Case)	1.0	1.141	1.141

- 4.91 Due to the methodology used to allocated repair related costs in the Cost Model, we are not able to isolate the impact of using the 14.1% from the impact from our fault rate base case proposal set out in Section 5. In Table 5.9 in Section 5 we set out the

<sup>109</sup> One alternative discussed was to introduce some constraints in increasing Saturday repairs. This may add complexity though in return for limited material impact. Another (but less satisfactory) approach would be exclude Saturday repairs but to redistribute them across the week, not on the basis of an equi-proportional approach which substantially increases the Service Level 2 peak on Monday, but spreading them equally across the week (20% for each weekday).

combined impact of the fault rate and service level differential base cases on unit costs.

- 4.92 We do not propose to accept the value of 23% put forward by Openreach as a basis for setting Service Level differentials. However, for the purposes of this Consultation we have decided to include this value as an upper range scenario in our sensitivity analysis in Table 8.5 in Section 8 (referred to as “High faults level”).

**Question 4.1:** *Do you agree with our proposal on how conceptually to estimate the cost differential? Please provide reasoning for your answer.*

**Question 4.2:** *Do you agree that the Resource Simulation Model appropriately adjusted for estimating the cost differential is an improvement on the way we previously used to set this differential? Please provide reasoning for your answer.*

**Question 4.3:** *Do you agree that we have undertaken the correct and appropriate adjustments to the Resource Simulation Model to better reflect reality? Please provide reasoning for your answer.*

**Question 4.4:** *Do you consider that there may be ways in which the Resource Simulation Model could be changed to make it more reflective of the reality – e.g. Gamma distribution assumptions and exclusion of Saturday working for Service Level 2? Please provide reasoning for your answer.*

## Section 5

# Fault rates

## Summary

- 5.1 In this Section we set out our proposals in respect of the treatment of fault rates in the LLU/WLR Charge Controls. The cost of repairing faults is a significant proportion of the cost of providing the rental services. In the base year of the Cost Model in the July 2013 Consultation, the cost of repairing faults represents 16% of the MPF cost stack, 14% of the WLR Basic cost stack and 27% of the SMPF cost stack.<sup>110</sup>
- 5.2 In this Section we set out our proposals in relation to the overall level of fault rates in the base year of the Charge Control, the relative level of fault rates for the key products (MPF, WLR and SMPF) and whether those fault rates are likely to change over the Charge Control period.
- 5.3 We propose that:
- the overall level of faults in the base year should be what was actually experienced in recent years and which is consistent with the costs that we assume in the base year;
  - the relative level of fault rates for the key products should be as set out in Table 5.1 below; and

**Table 5.1: Proposed relative fault levels**

Product	Relative fault levels
MPF	1
WLR	0.87
SMPF	0.13
WLR + SMPF	1.0

- the fault rates should remain constant throughout the Charge Control period (i.e. the fault rates in 2016/17 should be assumed to be the same as those for the base year).

<sup>110</sup> In the 2011/12 figures. These figures comprise the cost components which include repair costs: Side Copper Current; D-Side Copper Current; PSTN Dropwire Maintenance; and Local Exchange General Frames Current.

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- 5.4 We welcome the work currently being undertaken by the OTA in relation to fault rates and will consider what, if any, further work could be undertaken in this area to provide useful insights into managing fault rates more generally.
- 5.5 In this Section we summarise: the approach set out in the July 2013 FAMR Consultation and the July 2013 Consultation, the responses from stakeholders to those Consultations and progress to date on a review of Early Life Failures (ELFs) on MPF lines by the OTA.<sup>111</sup> We then set out our further analysis on fault rates, including the analysis undertaken by CSMG on our behalf, and our proposals for the fault rates that should apply in this Charge Control.

## The July 2013 FAMR and July 2013 Consultations

### July 2013 FAMR Consultation

- 5.6 In Annex 9 of the July 2013 FAMR Consultation, we set out our analysis of Openreach's recent installation order and fault performance. In Annex 10 of the July 2013 FAMR Consultation we set out our analysis and provisional conclusions on the reasons for the levels of recent service performance. Table 5.2 below reproduces Figure A10.5 of the July 2013 FAMR Consultation showing the volume of faults completed by Openreach.

**Table 5.2: Volume of faults completed**

Year (millions)	WLR PSTN	SMPF	MPF	GEA	Total
2009 <sup>112</sup>	1.6	0.1	0.2	-	1.9
2010	2.0	0.09	0.4	-	2.5
2011	2.3	0.05	0.6	0.1	2.9
2012	2.1	0.06	0.8	0.1	3.0

Source: Ofcom analysis of data supplied by Openreach to the OTA

- 5.7 We also said that there were approximately 3% more faults reported in the period April 2012 to February 2013 compared to the previous year.
- 5.8 In considering the reasons for this apparent increase, we said the evidence was not conclusive as to whether Openreach had cut its resources for access services, but that there appeared to have been an increase in activities these resources needed to carry out. We also noted that field engineering resource had declined from April 2008 to around July 2010 but then rose so that by the end of October 2012 it was higher than in April 2008.
- 5.9 We investigated the impact of the weather and said that the available evidence did suggest some correlation between rainfall and fault report volumes. We said that

<sup>111</sup> An ELF is fault that occurs within a defined period after the completion of an installation order on a line. Several definitions are used, including 8 days, 28 days and 30 days.

<sup>112</sup> Jan 2009 to March 2009 pro-rated.

persistent wet weather in 2012 appeared to have caused problems for Openreach (compared to other times where periods of high rainfall were short-lived).

- 5.10 We also considered whether increasing broadband usage may have contributed to a rise in fault rates, as has been suggested by BT. We explained our provisional view that increasing broadband usage may be causing reported fault rates to increase, but with the current information available we could not confirm or quantify any such increase.
- 5.11 In relation to the question of preventative maintenance, we did not present data but said there may be further scope to drive down fault rates with preventative maintenance.
- 5.12 Since we published the July 2013 FAMR Consultation we have reviewed the data in Table 5.2 above. We have not been able to obtain actual fault volumes for 2008 and the early part of 2009. However, in Chart A9.1 of the 2009 PFFO Statement we presented data from Openreach on its historic faults (and its projections for 2009 onwards), which is reproduced below in Figure 5.1.<sup>113</sup>

**Figure 5.1 Historical and projected access fault volumes in 2009**



Source: Openreach data first presented in Ofcom, *A new pricing framework for Openreach – Annex 9, Statement*, 22 May 2009.

- 5.13 For 2007 (the last year of the historical fault data provided by Openreach in 2009), there were approximately 2.8m faults. To achieve a figure of 1.9m in 2009 as indicated in Table 5.2 above would suggest a reduction in faults of over 15% per annum, as compared to our forecast of 2%. Based on this actual fault data, and our

<sup>113</sup> Chart A9.1, Ofcom, *A new pricing framework for Openreach - Annex 9, May 2009*, <http://stakeholders.ofcom.org.uk/binaries/consultations/openreachframework/statement/annexes.pdf>, (Ofcom, 2009 PFFO Statement).

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conclusion in the 2009 PFFO Statement that fault volumes should reduce by 2% per annum in the period 2009/10 to 2012/13, we now consider the volume of faults for 2009 published in the FAMR Consultation and reproduced in Table 5.2 above may be under-stated.<sup>114</sup>

- 5.14 As shown in Figure 5.1 above, Openreach forecast that faults in 2009 would be of the order of 2.5m. However, if this represents an accurate figure, it would suggest that the volume of faults in the first quarter of 2009 would be double that in each on the three subsequent quarters for the rest of 2009, approximately 1.0m versus 0.5m. This seems unlikely.
- 5.15 Therefore, whilst we may assume the volume of faults lies within a range between 1.9m and 2.5m for 2009, compared to the 1.9m presented in our July 2013 FAMR Consultation, we cannot establish a definitive figure of faults for 2009.<sup>115</sup> This range would suggest an increase in faults from 2009 to 2012 of between 20% and 53%.

### July 2013 Consultation

- 5.16 We also discussed fault rates in the July 2013 Consultation and specifically their relevance to the Charge Controls. We explained that fault rates were part of the appeal brought by Sky and TalkTalk against the 2012 Statement (the Sky-TalkTalk appeal) and that the CC identified errors in our approach to the treatment of “young lines”, as a result of ELFs.<sup>116</sup> Given the complexity of the issue, the CC remitted the issue back to us for further consideration. We said that we were undertaking further analysis (the remittal analysis) to address the points raised by the CC and that this would also help inform our considerations in this Charge Control about:
- the appropriate level of faults for the base year from which we are forecasting, explaining if and why it should deviate from that reported by BT;
  - the expected level of faults for the end year of the Charge Control (2016/17), explaining if and why that level is different from the start year (for example due to the impact of ELFs); and
  - for 2016/17, the likely relative incidence of early-life and in-life faults on MPF and WLR+SMPF lines, respectively, and whether there is likely to be any enduring difference between the incidence of faults on MPF lines as opposed to WLR and WLR+SMPF lines.
- 5.17 In the July 2013 Consultation we used data from 2011/12 and relative fault rates of 1, 1.04 and 0.16 for WLR, MPF and SMPF respectively but said that we would update these figures in this Consultation.
- 5.18 We also set out our views on the case for setting the fault rates for WLR+SMPF and MPF to be equal. We said that if our analysis on faults could not identify explicable and measurable systematic differences in faults between different lines/services then we may consider equalising the fault costs between WLR+SMPF and MPF. We explained that our logic in doing this would be that all lines are basically the same

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<sup>114</sup> Paragraph A9.124, Ofcom, 2009 PFFO Statement.

<sup>115</sup> A reduction of 2% per annum from 2.8m in 2007 would suggest that the volume of faults for 2009 would be 2.7m.

<sup>116</sup> Paragraphs 2.32-2.44, Ofcom, July 2013 Consultation

and that the number of faults on an MPF line (which is generally used to support voice and broadband) should therefore be the same as the number of faults on an WLR+SMPF line (which is being used to support voice and broadband). We also set out that there are also a number of practical and policy reasons for this approach:

- gathering reliable data on fault rates for different lines/services may prove to be extremely difficult and costly;
- if Openreach knows that the price of MPF would rise, relative to WLR+SMPF, if it reported/allocated more faults to MPF then this could distort its decisions as to how it reports/allocates faults; and
- we are trying to ensure that a CP's choice of which wholesale products to purchase (WLR+SMPF v MPF) is based on which is most efficient and we would not want this decision to become distorted by inappropriate, and unsustainable, fault cost allocations.

## Summary of Consultation responses

- 5.19 Eight of the respondents to the July 2013 FAMR and July 2013 Consultations made comments about fault rates. We summarise these comments below.
- 5.20 Consultation responses relating to other aspects of Openreach's QoS are discussed in Section 3 and responses relating to other aspects of the FAMR and Charge Control proposals will be addressed in the our final statement on these issues.

### Openreach

- 5.21 Openreach stressed that fault rates and volumes are dependent on factors which are volatile and not entirely under its control or the control of CPs. Factors highlighted include:
- different product fault rates and a changing mix of products has changed and is changing the overall fault volumes and demand for engineers time as volumes of higher Service Level products (e.g. MPF) increases;<sup>117</sup>
  - inclement weather, including rain, snow, fog, wind and high temperatures, affects its network in different ways accounting for 34% of the overall fault volume and 43% of their repair engineering task time;<sup>118</sup>
  - greater broadband usage, coupled with more demanding applications and the use of multiple devices, is increasing users' expectations of Openreach products and service. Openreach claimed this has led to an increase in customer problems which are not technical copper line faults.<sup>119</sup> This had led to increased demand for Openreach's Special Faults Investigation (SFI) and Broadband Boost (BBB)

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<sup>117</sup> Paragraphs 20-24, Openreach Response to the FAMR and July 2013 Consultations (Quality of Service)

<sup>118</sup> Paragraph 141, Ibid.

<sup>119</sup> The electrical characteristics of the line fall within Openreach's technical specification for copper lines, known as SIN 349.

products which is putting increased pressure on Openreach's service teams;<sup>120</sup> and

- faults reported after 6pm have increased, especially for Service Level 2 products (most notably MPF), resulting in increased demand for engineers because there is less time to complete the repair to meet the SLA.<sup>121</sup> We do not consider this would change the level of faults and so do not discuss this point further in this Section.

5.22 Openreach also highlighted the increase in certain types of extreme weather events in recent years, their correlation with peaks in fault volumes and also noted that weather experts believe these extremes will continue and possibly intensify.<sup>122</sup> To support its arguments Openreach commissioned three reports which it submitted with its Consultation response:

- Trends in weather and climate of the UK: Evidence from observations by the Walker Institute Report (University of Reading);<sup>123</sup>
- Openreach Climate Change Summary by Cranfield University;<sup>124</sup> and
- Overview of climate change impacts by UKCIP.<sup>125</sup>

### Deloitte analysis for Openreach

5.23 Openreach commissioned Deloitte to analyse fault rate levels and trends for WLR, SMPF and MPF services. Deloitte's analysis and findings were described in its report which Openreach submitted with its Consultation response.<sup>126</sup>

5.24 Deloitte analysed Openreach fault data for the period October 2011 to early September 2013 and also analysed order data for the same period to determine whether order activity had any impact on fault rates. Deloitte's conclusion was that WLR, MPF and WLR+SMPF services had different fault rates, most notably in relation to ELF's as summarised in Table 5.3 below.

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<sup>120</sup> Paragraphs 33-37, Openreach Response to the FAMR and July 2013 Consultations (Quality of Service).

<sup>121</sup> Paragraphs 38-43, Ibid.

<sup>122</sup> Paragraphs 29-32, Ibid.

<sup>123</sup> Walker Institute, *Trends in the weather and climate of the UK: Evidence from observations*, report for Openreach, June 2013, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach - Walker Institute report.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach-Walker_Institute_report.pdf).

<sup>124</sup> Cranfield University, *Openreach climate change summary*, report for Openreach, May 2013, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach - Cranfield University report.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach-Cranfield_University_report.pdf).

<sup>125</sup> UKCIP, *Ofcom's fixed asset market review - overview of climate change impacts report for Openreach*, September 2013, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach - UKCIP report.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach-UKCIP_report.pdf).

<sup>126</sup> Deloitte, *Openreach fault data: data analysis*, report for Openreach, September 2013, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach - Deloitte report.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach-Deloitte_report.pdf).

**Table 5.3: BT/Deloitte fault rates per product for the period October 2011 to September 2013**

Product	Fault rates (faults per 1,000 lines)		
	Average	In-life	Early Life
WLR	1.6	1.5	4.0
WLR+SMPF	2.3	2.1	4.5
MPF	2.0	1.7	13.2

Source: Table 1, Openreach response to FAMR and July 2013 Consultations (Quality of service).

- 5.25 Deloitte found (i) very little correlation between order activity that involved field engineering and or frame activity (which it termed ‘customer switching’ activity) and ILF fault rates (correlation coefficient of 0.07) and (ii) a stronger correlation with ELF fault rates (correlation coefficient of 0.25).<sup>127</sup> Deloitte said that the latter indicates higher incidence of customer switching order activities can be linked to higher ELF rates.<sup>128</sup> Deloitte also reviewed the level of customer switching order activity between January 2012 and July 2013. It found that WLR+SMPF services had a lower incidence of such orders than WLR only services and that MPF services had a much higher incidence than WLR services.<sup>129</sup>
- 5.26 Deloitte also examined ELF rates over the period September 2011 to June 2013, concluding that ELF fault rates for MPF services had risen.

#### *Deloitte’s Addendum to its analysis*

- 5.27 At the start of December 2013, Openreach sent an addendum containing further analysis carried out by Deloitte.<sup>130</sup> This included analysis of data up to November 2013. Given the date on which this was received, we have only been able to carry out a preliminary assessment of the points made, which we discuss below. We will give further consideration to Deloitte’s addendum along with other responses to this Consultation.
- 5.28 In the report Deloitte said:
- The correct treatment of Modified Primary Line (MPL) orders would increase the ELF rate and reduce the ILF rate for WLR and WLR+SMPF<sup>131</sup>;
  - Deloitte investigated the link between fault rates and seasonality. It suggests weather as a cause for seasonal variations (but notes that adverse weather should lead to higher fault rates when discussing the decline in faults for December). It said that, after correcting for seasonality, ILF rates have increased

<sup>127</sup> Figure 14. Ibid.

<sup>128</sup> Page 12. Ibid.

<sup>129</sup> Figure 9. Ibid.

<sup>130</sup> Deloitte: *Openreach fault data: data analysis. Addendum to the September 2013 Report*, December 2013, [http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach\\_Deloitte\\_report\\_addendum.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/Openreach_Deloitte_report_addendum.pdf).

<sup>131</sup> Page 15. Ibid.

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between September 2011 and November 2013. Deloitte also highlighted increasing ELF rates<sup>132</sup>; and

- Deloitte discussed the impact of increasing numbers of lines supporting broadband and the impact of increasing NGA deployment.<sup>133</sup>

5.29 We would need to consider the specific circumstances set out by Deloitte to understand the effect of MPL orders. We note that Deloitte states that this change does not materially affect the key findings from its earlier report.

5.30 Figure 7 of the report shows the average faults per month per quarter. From an initial review, it appears to us that the growth in faults is largely due to an increase in faults categorised as “other”, whilst the product faults shown as WLR PSTN, WLR+SMPF and MPF, in aggregate, have remained broadly level.<sup>134</sup>

5.31 We also note that whilst Deloitte offers further analysis suggesting increasing fault rates (both ILFs and ELFs) it has not suggested any underlying causes, other than the effect of MPL orders. Our preliminary view is that the Deloitte addendum does not present evidence that would change our analysis as explained below,

5.32 We note that Openreach, however, considers that this evidence strengthens their assessment that there is a clear underlying trend in increasing faults. Accordingly, we will consider the submission further along with other response to the Consultation and also consider whether we should undertake further detailed data analysis including requesting additional data from Openreach.

### **Frontier Economics review for Sky and TalkTalk**

5.33 Sky and TalkTalk commissioned Frontier Economics to review certain aspects of the July 2013 Consultation. Sky and TalkTalk submitted the report as part of their Consultation response.<sup>135</sup>

5.34 Frontier argued that BT has not provided robust evidence showing MPF lines have higher fault rates than WLR lines for the period before NGA rollout began, particularly when ELFs are excluded. They argue more recent data will be distorted by the effect of NGA rollout and provisioning on fault rates. In their view an approach that disproportionately allocates the costs of fault repair to MPF does not seem justified by the available evidence.<sup>136</sup>

5.35 Frontier also argued that BT's fault rates are inefficiently high. It argued that fault rate figures presented in the July 2013 FAMR Consultation Annex 10 indicate a large rise in fault rates since 2009 after a long period of decline. It argued there is not strong evidence to suggest this is due to exogenous factors. In relation to rainfall Frontier argued that the July 2013 FAMR Consultation indicates a weak correlation with

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<sup>132</sup> Pages 12-13, *ibid.*

<sup>133</sup> Pages 13-14. *ibid.*

<sup>134</sup> Figure 7, *ibid.*

<sup>135</sup> Frontier Economics, *Ofcom's LLU and WLR Charge Controls Proposals: a report prepared for Sky and TalkTalk*, October 2013, [http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Sky\\_and\\_TalkTalk\\_Group\\_Frontier\\_Economics\\_report.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Sky_and_TalkTalk_Group_Frontier_Economics_report.pdf).

<sup>136</sup> Paragraph 3.54. Frontier Economics, *Ofcom's LLU and WLR Charge Controls Proposals*.

rainfall that could explain only about 6% of the growth in fault volumes.<sup>137</sup> It also noted that fault volumes have risen even when rainfall was lower (e.g. 2009 compared with 2011).<sup>138</sup> In relation to broadband penetration, Frontier cited a lack of compelling evidence and the fact that BT was able to reduce fault rates by 34% between 2001 and 2009 despite significant increases in broadband penetration.<sup>139</sup>

- 5.36 Frontier argued that endogenous factors are most likely to explain the growth in fault rates, specifically increased activity in the network due to NGA deployment and provisioning, diversion of skilled resources from copper to NGA and reduction of investment in copper to fund NGA amongst other things.<sup>140</sup>

## Sky

- 5.37 Drawing on the Frontier Economics report, Sky argued that it is clear that current fault rates are excessively high, suggesting it is a consequence of resources and investment being redirected to NGA from WLR and LLU and increased intervention in the access network associated with NGA deployment and provisioning.<sup>141</sup>
- 5.38 Sky suggested that Ofcom should estimate fault rates by reference to those of an efficient ongoing copper network. Making use of the Frontier Economics report, Sky argued that a reasonable estimate of an efficient fault rate would be to take the rate from 2009 when fault rates began to rise and reduce it by 5% annually to reflect typical rates of improvement up to that point. This gives a rate for 2012 that is 47% lower than that reported by BT and would reduce the MPF price by £6.59 by 2016/17.<sup>142</sup>
- 5.39 Sky argued that the reasons given by BT for the rise in fault rates (increased rainfall and increased broadband penetration) were not sound. In particular, fault rates have continued to rise even when rainfall levels have been in decline and fault rates have declined when broadband penetration grew most significantly.<sup>143</sup>
- 5.40 Sky disagreed with our suggestion that it might be appropriate to equalise relative fault rates for WLR+SMPF and MPF should we not be able to resolve the fault rate data integrity issues. Sky argued that the relative fault rates presented in BT's 2011/12 RFS [X] support the view that MPF rates are lower than WLR+SMPF rates. It argued that absent further reliable evidence we should use the differentials from BT's RFS and set usage factors for MPF and WLR+SMPF at 1.04 and 1.16 respectively. Sky said that failure to recognise the incremental cost differences would undermine Ofcom's broader policy objectives and unfairly disadvantage MPF operators.<sup>144</sup>

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<sup>137</sup> Paragraph 2.22, *Ibid.*

<sup>138</sup> Figure 3, *Ibid.*

<sup>139</sup> Paragraphs 2.25-2.27, *Ibid.*

<sup>140</sup> Paragraph 2.31, *Ibid.*

<sup>141</sup> Paragraphs 3.14-3.16. Sky, *Response to the July 2013 Consultation*, October 2013, <http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Sky.pdf>.

<sup>142</sup> Paragraph 3.24, *Ibid.*

<sup>143</sup> Paragraph 3.20. *Ibid.*

<sup>144</sup> Paragraphs 10.43-10.44, Sky *Response to the July 2013 Consultation*.

## TalkTalk

- 5.41 TalkTalk argued that Openreach's fault levels are excessive at a level of 53% above where they were in 2009 and that, whilst evidence on higher fault rates on broadband lines is mixed, with just 10% broadband growth and weak dependence of faults on rainfall no more than 10% of the increase in faults could be due to exogenous factors such as weather or broadband uptake.<sup>145</sup>
- 5.42 Drawing on the Frontier Economics report, TalkTalk suggested two explanations for the bulk of the increase in faults. The first is that Openreach has, since 2009, reduced (i) the amount of preventative maintenance performed; (ii) capital investment in the copper network and (iii) the number of employees and contractors.<sup>146</sup> The second explanation is that NGA rollout is increasing fault rates because of physical intervention in the network and NGA lines may be more sensitive to or have a higher propensity to fault. TalkTalk argued that costs relating to the NGA causes should be incremental to NGA and not to LLU/WLR charges.<sup>147</sup>
- 5.43 TalkTalk also said that any minimum service standard should include fault rates (or, alternatively, a service availability measure).<sup>148</sup>

## Other respondents

- 5.44 ASSIA suggested that best practices in Dynamic Spectrum Management (DSM)<sup>149</sup> can reduce faults in LLU and NGA and the cost of fault repairs by identifying their nature and location. The second factor is particularly important for WLR and bitstream services, in which a retailer is responsible for issues on the premises and the wholesaler elsewhere. Assia claimed many faults can be resolved remotely through DSM, reducing the cost of the line item and the charge recoverable by Openreach.<sup>150</sup>
- 5.45 Whilst CPs are free to decide whether to use DSM to help locate and diagnose faults, we do not consider it would be appropriate to factor use of such techniques into our analysis given that we would need to speculate on the potential costs and benefits.
- 5.46 BT Group highlighted that BT Retail has come under pressure from increased fault volumes as network infrastructure has struggled to cope with increasingly volatile weather patterns and the demand placed upon it by the growth of broadband and video-based services. A shift to MPF has taken place and BT Group argued that

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<sup>145</sup> Paragraph 2.16, TalkTalk, *Response to the July 2013 Consultation*, October 2013, [http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/TalkTalk\\_Group.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/TalkTalk_Group.pdf).

<sup>146</sup> Paragraphs 2.19-2.21, *Ibid*.

<sup>147</sup> Paragraph 2.23, *Ibid*.

<sup>148</sup> Paragraph 2.7, TalkTalk *Response to the FAMR Consultation (Quality of Service)*.

<sup>149</sup> DSM is a technique for controlling the transmitted power at different frequencies within the digital subscriber line signal, and consequentially crosstalk noise on adjacent lines, to maximise received bit-rate and minimise received bit errors.

<sup>150</sup> Pages 11-12, ASSIA, *Response to the July 2013 Consultation*, September 2013, [http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Adaptive\\_Spectrum\\_and\\_Signal\\_Alignment\\_Inc.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Adaptive_Spectrum_and_Signal_Alignment_Inc.pdf).

Ofcom needs to review the impact of the service level differential that applies to MPF on competition and remove measures applied to support MPF market entry.<sup>151</sup>

- 5.47 One other CP [X] argued it is reasonable to expect different fault rates on different products but products should be cost orientated individually, including by fault repair rates, and should never cross-subsidise one another.<sup>152</sup>
- 5.48 Verizon argued that while there is no obvious reason why, MPF lines do appear to be more susceptible to faults, particularly ELF, and this should be taken into account to ensure that services bear the appropriate allocation of costs.<sup>153</sup>
- 5.49 Virgin Media commented that it would be useful to see the outcome of Ofcom's analysis as to why fault levels differ between apparently similar services.<sup>154</sup>

### OTA review of Early Life Faults on MPF lines

- 5.50 As highlighted in the July 2013 Consultation, the OTA is undertaking a review of ELFs on MPF and WLR lines in order to understand what is driving the apparent increase in ELFs and to identify what mitigating actions can be taken.<sup>155</sup> The review is being undertaken with assistance from Openreach, Sky as lead CP and two other CPs.
- 5.51 The OTA's initial investigations appear to suggest that issues endogenous to Openreach (e.g. process issues) may play a part in at least some of the increase in ELF rates, although it is difficult to quantify the scale and effect of such issues. Following an initial top level analysis a program of work has been developed between the OTA and Openreach. This plan consists of three work streams:
- i) frame-only order issues (i.e. start of a stopped line ('start of stop'));
  - ii) reduce overall ELF rate (all order types); and
  - iii) eliminate ELFs by provision redesign (root cause correction).
- 5.52 The OTA has found the issues to be more complex than originally anticipated. The review has progressed sufficiently for the OTA to identify that fault levels linked to start of a stopped line orders are worse than those related to new line provision or migration. Some issues also seem to exist with the 'visit save' order process although not to the same level as with start of a stopped line orders.<sup>156</sup> However it is too early to draw further conclusions because root causes have not yet been determined.

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<sup>151</sup> Pages 16, 34, BT Group Response to the FAMR and July 2013 Consultations.

<sup>152</sup> [X]

<sup>153</sup> Page 7, Verizon, *Response to the July 2013 Consultation*, September 2013, <http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Verizon.pdf>.

<sup>154</sup> Page 14, Virgin, *Response to the July 2013 Consultation*, September 2013, [http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Virgin\\_Media.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Virgin_Media.pdf).

<sup>155</sup> Paragraph 5.25, Ofcom, July 2013 Consultation

<sup>156</sup> Generally there are two types of new provide: Start of a Stopped Line and Visited provide. A Visited provide means that both an exchange and a customer visit are required. To reduce the number of visits actually made, Openreach has a process whereby its routing system may find a path

5.53 We recognise fault rates are an important issue as they directly impact the service experienced by the end user and, to that end, we see value in continuing to develop an understanding of the factors that drive fault rates. In this context we welcome the work currently being undertaken by the OTA and will consider what, if any, further work we could undertake in this area to provide useful insights into fault rates.

## CSMG analysis of fault rates

5.54 In order to further examine the fault rates associated with WLR, SMPF and MPF services, we commissioned CSMG to undertake a detailed analysis of evidence obtained from BT using our statutory information gathering powers. Within this analysis, and in the further analysis we have carried out in addition to CSMG's work, we have excluded faults that are not related to charge controlled products (or are accounted for elsewhere in the Charge Control) as follows:

- We have excluded faults related to the WLR line card. This is because the costs of repair and maintenance of line cards is included in the line card costs, which are fully allocated to WLR;
- We have removed BBB, SFI, Conscious Decision To Appoint (CDTA) and Conscious Decision To not Appoint (CDTnA). This is because these are separately charged services;
- We have excluded faults related to products not in the Charge Control (i.e. ISDN related faults, NGA related faults); and
- We have excluded faults where the clear code was not related to the Openreach network (such as faults isolated to Customer Premise Equipment (CPE) and customer wiring beyond the Network Terminating Equipment (NTE)).

5.55 We commissioned CSMG to perform an analysis to:

- Determine ELF and In-Life failure (ILF) rates for WLR, WLR+SMPF and MPF;
- Investigate why WLR+SMPF and MPF fault rates may be different considering at least the following causal factors:
  - line length;
  - urban versus rural locations (overhead line delivery);
  - specific segments of the network;
  - last service transition type experienced by a line;
  - activities relating to the rollout of NGA; and
- Forecast the fault rates for 2016/17.

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to the premise but with no connection on the frame. At two days before the customer confirmed date, Openreach provides a frame connection and tests the circuit. If the circuit passes this test it cancels the visit and informs the customer that the service is now working. This is seen as an optional process.

- 5.56 The data set reviewed by CSMG was not obtained directly from BT operational management systems but has been processed for analysis purposes by Openreach so that it allows a 'line biography' to be determined. That is the information has been processed to enable orders and faults relating to individual lines to be associated with each other so that the order/fault history of lines can be examined. The data was extracted from BT's operational systems for the period 1 April 2011 to 31 August 2013. It also contains information on working systems sizes<sup>157</sup>.
- 5.57 We also requested and obtained a copy of the line length disclosure of 10 July 2012 made by BT to Analysys Mason in the Sky-TalkTalk appeal.<sup>158</sup>
- 5.58 We have published CSMG's report alongside this Consultation (at Annex 10).<sup>159</sup> A further description of the dataset is provided in CSMG's report, along with CSMG's analysis and findings. We summarise CSMG's findings and the issues arising below.

### Data integrity

- 5.59 CSMG did not carry out a formal assessment of the quality of the data provided by Openreach, but did make the following two observations concerning potential quality issues:
- The field codes in a small number of records were incompatible with the product, e.g. broadband fault on a WLR line;<sup>160</sup> and
  - The data in the first week was incomplete and the ELF data for the first ten weeks appeared to cause the ELF rates to rise from near zero to values more consistent with the rest of the period. Consequently trend analysis was limited to a 105 week period from September 2011 to August 2013.
- 5.60 In addition:
- CSMG and Deloitte used similar data sets but there were differences. The working system size datasets were consistent with differences in Compound Annual Growth Rate (CAGR) of less than 2%. However, the CSMG fault dataset was larger: at approximately 9.5m records compared to the Deloitte dataset of approximately 7.5m records. After removing out-of-scope records, the CSMG in-scope dataset contained 4.68m records compared to the Deloitte dataset of approximately 4.55m records. CSMG was not able to reconcile the differences.

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<sup>157</sup> This dataset was selected after attempts to use direct extracts from Openreach's management information systems demonstrated that, absent a clear line biography, there was a significant risk of fault mis-categorisation between ELF's and ILF's for each service and also between WLR only, WLR+SMPF and the WLR and SMPF component services in WLR+SMPF. The information in the existing datasets was also insufficient to perform some of the analysis we had requested, e.g. impact of last service transition on fault rates.

<sup>158</sup> Fourth QoS information request of 20 September 2013 addressed to and received from British Telecommunications plc.

<sup>159</sup> CSMG, *WLR and LLU Fault Rates Analysis: Final report, prepared for Ofcom*, November 2013.

<sup>160</sup> CSMG used the term 'incompatible field codes' to describe the unreliable or inconsistent data fields that they found in the data. For example, the 'Fault Product' field contained data suggesting broadband faults on a WLR-only line, or GEA faults on non-GEA products. This was likely the result of incorrect data entry by technical staff when updating and/or closing trouble tickets.

Redacted for publication [X<]

- CSMG found that it was not possible to accurately and reliably disaggregate the faults on WLR+SMPF lines into individual WLR and SMPF faults. Two different approaches were tried but the results were found to be inconsistent with other results. Consequently, whilst CSMG was able to provide fault rate estimates for MPF, WLR only and WLR+SMPF, it was not able to provide fault rate estimates for SMPF.
- The data covered the period April 2011 to August 2013. CSMG observed that confidence in long-run trend analysis was limited by the relatively short period covered by this data.

### In-Life Faults (ILFs)

5.61 CSMG investigated the differences in relative ILF rates, and the historic ILF rates.

5.62 It considered annual ILF rates and the weekly ILF rate (based on a four week moving average). The annual ILF rates estimated by CSMG for the datasets provided are presented below in Table 5.4.

**Table 5.4: In-life fault (ILF) rates as proportion of working lines<sup>161</sup>**

Line Type	2011/12	2012/13
MPF	8.5%	9.1%
WLR Only	7.4%	7.9%
WLR + SMPF	9.1%	9.6%

Source: CSMG's Fault Rates Report

### *Relative ILF rates*

5.63 CSMG's estimates indicate that the WLR+SMPF ILF rate is slightly higher than the MPF ILF rate for both years. The WLR+SMPF ILF rate is also slightly higher than the MPF ILF rate when the 4-week moving average ILF rates are considered, except for a short period around March-April 2013. Variations in the ILF rate over the time period for each product are greater than the difference between the WLR+SMPF and MPF ILF rates. WLR ILF rates are always consistently lower than those of WLR+SMPF and MPF.

5.64 To attempt to understand why WLR+SMPF ILF rates are higher than MPF ILF rates, CSMG tested whether:

- line length was a factor in the different fault rates;
- there is a relationship between population density and fault rates; and
- faults in certain network segments were responsible for any differences.

<sup>161</sup> For the product of interest, the ILF rate is the number of faults per year divided by the average number of working lines. For example, in the year 2011/12, the number of MPF ILFs per year will be 8.5% of the average number of working MPF lines during the year.

- 5.65 CSMG found that MPF lines are on average shorter than WLR+SMPF lines by about 1.7%. However, it found that the correlation between line length and ILF rate is low ( $R^2$  of 0.0185).
- 5.66 CSMG suggested that if there was a correlation between population density and fault rates, this could provide a possible reason for lower MPF ILF rates because exchanges where MPF has been deployed are more likely to be in more densely populated areas than exchanges with WLR+SMPF. Whilst CSMG found some clustering of high ILF rates in rural locations, it found only a weak inverse relationship ( $R^2$  of 0.0014) between fault rate and densely populated areas.
- 5.67 Finally, CSMG investigated whether a particular network segment may be responsible for the differences in ILF rates. However no particular network segment was found to be the cause of the differences and changes in ILF rates.

### *Historic ILF rates*

5.68 CSMG's annual ILF rate estimates were higher for 2012/13 than those for 2011/12 (see Table 5.4 above). However, its weekly ILF rates appeared to show a relatively flat trend.<sup>162</sup> Therefore, CSMG investigated the trends in ILFs by comparing two years of data<sup>163</sup> and found that:

- there was no clear trend of higher ILFs in Year 2 relative to Year 1; and
- for some intervals, the Year 1 ILF rates were higher whilst for others Year 2 ILF rates were higher, for all three products.<sup>164</sup>

### Early life faults (ELFs)

5.69 Table 5.5 and Table 5.6 show two annual ELF rates calculated by CSMG, one relative to the number of new provisions for each period of interest and a second relative to the average weekly working system size of early life lines.<sup>165</sup>

**Table 5.5: Early life fault (ELF) rates as proportion of number of provisions<sup>166</sup>**

Line Type	2011/12	2012/13
MPF	4.2%	4.8%
WLR Only	3.1%	2.7%
WLR + SMPF	2.4%	2.8%

Source: CSMG's Fault Rates Report

<sup>162</sup> Figure 11, CSMG, Fault Rates Report.

<sup>163</sup> Paragraph 6.7, Ibid.

<sup>164</sup> Paragraph 6.10, Ibid.

<sup>165</sup> Here early life is defined as a 28 day period following activation of a service product or changes to the physical provision of that product.

<sup>166</sup> For the product of interest, this ELF rate is the number of ELFs in a period of time divided by the number of lines provisioned in the same period of time. For example, in the year 2011/12, the number of MPF ELFs in a month is equal to 4.2% of the number of MPF lines provisioned during the month.

**Table 5.6: ELF rates as proportion of early life working system size<sup>167</sup>**

Line Type	2011/12	2012/13
MPF	56%	63%
WLR Only	42%	35%
WLR + SMPF	32%	37%

Source: CSMG's Fault Rates Report

### *Relative ELF rates*

- 5.70 Tables 5.5 and 5.6 indicate the ELF rates for MPF are significantly higher than for WLR+SMPF and WLR.
- 5.71 CSMG investigated whether a particular network segment may be responsible for the differences and apparent changes in ELF rates over the period analysed. However no particular network segment was found to drive the differences and changes in ELF rates.

### *Historic ELF rates*

- 5.72 CSMG's trend analysis indicates that:
- the MPF ELF rate is consistently higher than the WLR+SMPF ELF rate; but
  - the WLR+SMPF ELF rate is not always greater than the WLR ELF rate.
- 5.73 However, CSMG's historical trend and 12 month interval analysis did not provide sufficient evidence to conclude the existence or absence of a long term trend in ELF rates.
- 5.74 CSMG also investigated whether the last change in service product<sup>168</sup> could be responsible for the differences and changes in ELF rates. If so, this could indicate what the future trend may be as the relative volume of each change in service product changed. CSMG said that its analysis demonstrated that transition type is not a significant driver of ELFs.

### Overall fault rates

- 5.75 Table 5.7 presents the overall annual fault rates estimated by CSMG.

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<sup>167</sup> For the product of interest, this ELF rate is the number of ELFs per year divided by the average number of lines per week classified as being in early life. For example, in the year 2011/12 the number of MPF ELFs per year will be 56% of the average number of new MPF lines each week that are within the early life period for that year.

<sup>168</sup> This relates to the process used when the new product was provided (e.g. single migration, new provide, activate broadband, etc.)

**Table 5.7 Overall fault rates expressed as faults per annum as proportion of working lines**

Line Type	2011/12	2012/13
MPF	10.3%	11.1%
WLR Only	8.1%	8.4%
WLR + SMPF	10.5%	10.8%

Source: CSMG's Fault Rates Report

- 5.76 CSMG found overall fault rates for MPF and WLR+SMPF were very similar with WLR+SMPF slightly higher for 2011/12 and MPF slightly higher for 2012/13. 4-week moving average overall fault rates were found to vary much more over time than the difference between MPF and WLR+SMPF fault rates, with neither being consistently higher over the two year period. CSMG also examined weekly fault rates which indicated that the overall fault rates are broadly flat.<sup>169</sup>
- 5.77 In addition to the analysis examining differences in ILFs and ELFs (as discussed above), CSMG considered whether NGA activities may lead to differences in fault rates. TalkTalk suggested NGA activities may lead to increases in WLR/LLU faults (but that these costs should be recovered from NGA activities). CSMG tested the hypothesis that NGA activity may be a driver of faults but found no meaningful correlation between overall fault rates and NGA activity.

### Summary of the CSMG report

- 5.78 The key findings presented in the CSMG report are:
- i) WLR+SMPF overall fault rate (ILF + ELF) is very similar to the MPF overall fault rate (WLR+SMPF is slightly higher in the first year whilst MPF is slightly higher in the second);
  - ii) WLR+SMPF has a slightly higher ILF rate than MPF over most the period analysed (April 2011 to August 2013) though the difference is lower than the variation in the fault rate over the period;
  - iii) ILF rates are flat for all products throughout the period analysed;
  - iv) MPF has a significantly higher ELF rate than WLR+SMPF over the period analysed;
  - v) MPF and WLR+SMPF ELF rates exhibit an increasing trend through the period whilst the WLR ELF rate shows a slight fall; and
  - vi) Whilst the annual figures calculated by CSMG may suggest increasing fault rates, this is not the case with its analysis of weekly fault rates or its trend analysis. It is not clear from the evidence available that there is an underlying upward trend in fault rates in 2011/12 and 2012/13.

<sup>169</sup> Figure 9, CSMG, Fault Rates Report.

5.79 In discussions, BT has challenged some aspects of CSMG's conclusions and interpretation of the data. We will consider these issues further once all stakeholders have had the opportunity to comment on the CSMG analysis.

## **Ofcom's analysis of the evidence on fault rates**

5.80 Whilst there are a range of issues related to faults, in relation to the Charge Control we have identified three particular issues that we need to address:

- The level of faults (and costs related to faults) in the base year;
- Whether there is any trend in fault rates over the period to 2016/17; and
- The relative fault rates of each product used to allocate costs to products in the Charge Control.

5.81 We discuss each of these in turn below.

### **Level of base year faults**

5.82 Our base year cost data will reflect the cost of providing the key services included in the Charge Control including the costs incurred in fixing the faults that occurred in that year and the investments made by Openreach (for example, in preventative maintenance).

5.83 In our view, Openreach is best placed to assess the balance between investment, preventative maintenance and the cost of fixing faults that occur. However, where Openreach reduces investment in preventative maintenance, this may have an implication for future Charge Controls. If we were to conclude that there had been under-investment such that the increased level of faults resulted in the overall costs being too high, we could consider making an adjustment to the base year costs. To make an adjustment, we would need to determine that the level of faults (and related fault costs) were too high in the base year compared to an efficient network operator, and what the right level of faults should be. In addition, we would also need to assess the impact of any such change on the overall costs used in our base case. In particular, we would need to consider what level of investment would be required to allow Openreach to make the necessary investments to maintain its network at the level implied by our reduced level of faults.

5.84 TalkTalk and Sky argued that the level of faults shown in 2012 in Table 5.2 above (in particular, the large increase in faults between 2009 and 2012) is indicative of under-investment and the impact of NGA. TalkTalk and Sky said that the current level of faults was excessively high. Sky said that an adjustment should be made to reduce faults by 5% from the 2009 level.

5.85 We discuss investment, preventative maintenance and the impact of NGA below.

## Investment and preventative maintenance

- 5.86 As explained in the July 2013 FAMR Consultation<sup>170</sup>, we gathered data from BT using our statutory information gathering powers to examine the costs of preventative maintenance investment in copper and infrastructure and on preventative maintenance activity (measured in thousands of man hours (Kilo Man Hours (KMH))). We said this data showed a reduction in preventative maintenance of about [X] in the years 2011/12 and 2012/13 when compared to the years 2007/08 and 2008/09.
- 5.87 We have also reviewed Openreach's overall investment in copper, which again shows a reduction in 2011/12 and 2012/13 when compared to 2007/08 and 2008/09.<sup>171</sup>
- 5.88 These reductions in preventative maintenance and investment may be a cause of increased fault volumes.
- 5.89 We said in our 2009 PFFO Statement that Openreach strongly argued that further investment would not sustain continued improvement of the level seen since 2001.<sup>172</sup> However Openreach did not say what level of investment and preventative maintenance was required to maintain the status quo from 2008/9. There are likely to be limits to the improvements that can be made with continued investment and preventative maintenance, especially from an engineering perspective. In the 2009 PFFO Statement we reported an Openreach provided breakdown of the factors driving reductions in fault volumes in 2008/09 and the likely impact of ongoing investment:
- a 12% deterioration of external faults due to the ageing of the network is offset by reductions due to investment in the network;
  - around a half of the reduction in faults is due to specific investment programmes such as investment in test and diagnostic equipment, frame quality, field force training and the targeting of high fault nodes that were largely complete and could not be expected to deliver similar reductions in future; and
  - investment in weatherproofing had significantly reduced the implications of bad weather for fault rates. Openreach argued that additional investment in weatherproofing could not be expected to deliver fault reductions in line with previous rates.<sup>173</sup>
- 5.90 Where these specific investment programmes were completed in 2008/9, a reduction in investment in following years would not necessarily represent under-investment or that continued investment would continue to deliver equivalent reductions in fault rates.
- 5.91 Sky argued that a continued 5% reduction in annual fault volumes from the 2009 level would represent an "efficient operator" fault volume level that is 47% lower than that reported by Openreach in 2012. We do not agree with Sky. We have discussed above the limitations with the data presented in Figure A10.5 of the July 2013 FAMR

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<sup>170</sup> Paragraph A10.91, Ofcom, July 2013 FAMR Consultation.

<sup>171</sup> Ofcom, FAMR LLU WLR 2013 RAV Model, July 2013.

<sup>172</sup> Paragraph A9.121, Ofcom, 2009 PFFO Statement.

<sup>173</sup> Paragraphs A9.121, A9.122, Ibid.

Consultation (and reproduced in Table 5.2 above) and so the starting point of the approach proposed by Sky is uncertain. In addition, we do not agree that an adjustment should be made. Whilst we note some reduction in investment and in preventative maintenance since 2009, we have been unable to determine whether Openreach has under-invested compared to an efficient level, such that fault rates are inflated, or, even if this were the case, what the extent of any such under-investment might be. We do note that if there has been under-investment in copper capex and preventative maintenance, this lower level of costs will be reflected in our base year cost data.

- 5.92 As such we propose not to make any adjustments based on the level of investments because we are not able to determine whether an adjustment would be appropriate, and, even if it was, we are not able to determine the level of any such reduction to the level of faults (and therefore fault costs), or associated increases in investment, to make to the base year cost data.

### Impact of rollout and take-up of NGA

- 5.93 TalkTalk and Sky also suggested that rollout and take-up of NGA could be the cause of some increase in faults but that any such faults should be considered as NGA faults.
- 5.94 Faults related to NGA rollout or take-up are outside the scope of the Charge Control and so should not be considered within this fault rates analysis. However, CSMG found no relationship between overall fault rates and NGA rollout and in some cases CSMG found that the fault rate was lower in areas where NGA had been deployed.<sup>174</sup>
- 5.95 Therefore, we do not propose to make any changes to our view of fault rates for the Charge Control period to take account of the impact of NGA rollout.

### Provisional conclusion on base year level

- 5.96 We do not consider there is evidence to suggest adjustments to the base year cost data should be made to take account of BT's approach to investment and preventative maintenance, or due to the diversion of resources to NGA roll-out. As such we propose to use the base year data which will reflect the costs and level of overall faults actually incurred.

**Question 5.1:** *Do you agree with our approach to establishing base year costs? Please provide reasoning for your answer.*

### **Fault rate trend during the Charge Control period**

- 5.97 We are interested in fault rates rather than the overall level of faults for the purposes of our Charge Control model. However, some of the evidence provided to us refers to increasing overall fault volumes. We address these here as part of our overall discussion on fault rate trends.
- 5.98 In Table 5.2 above we set out the evidence presented by Openreach to the OTA on the total volume of faults from 2009 to 2012, which shows an increase in faults each

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<sup>174</sup> Paragraphs 6.20-6.21, CSMG, Fault Rates Report

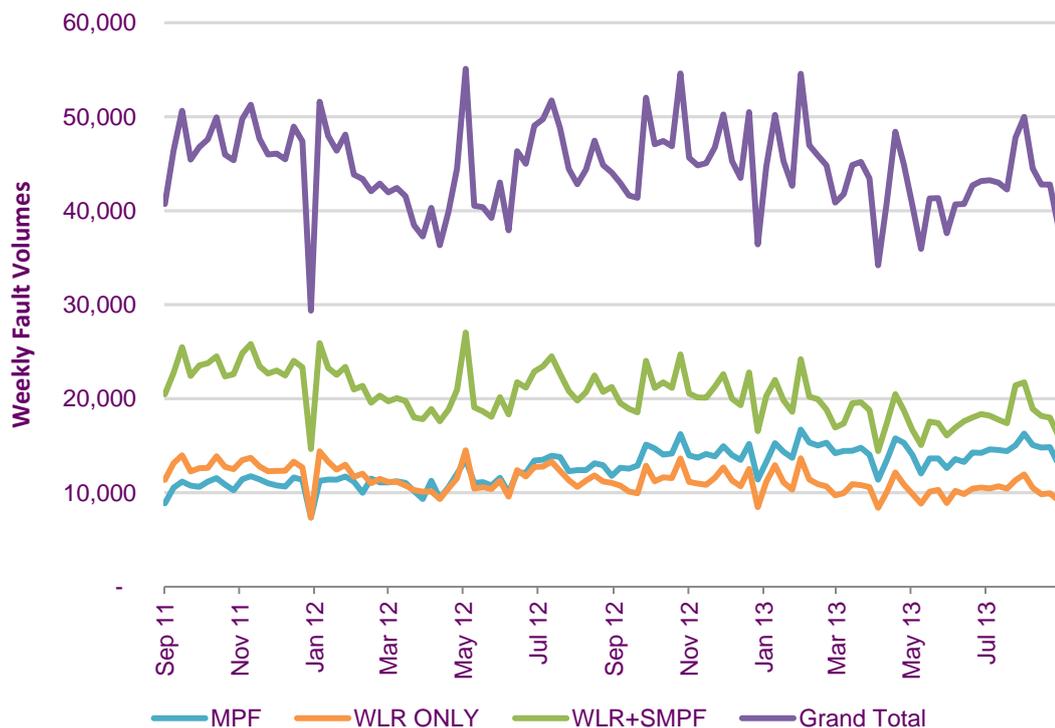
year between 2009 and 2012. In monthly service review meetings<sup>175</sup>, Openreach is reporting rising weekly fault intake volumes and that the volumes for 2013 appear generally to be higher than for 2012. Openreach and BT Group highlighted the continuing rise in fault volumes in their Consultation responses.

5.99 Openreach has argued that factors such as weather patterns and the increased usage of broadband (and increasing demands of broadband users) are driving these increases and that this would continue.

5.100 With only two years of detailed data available and differences over time generally smaller than week by week variations, we consider that, as highlighted by CSMG<sup>176</sup>, confidence in the long term fault rate trends estimated by CSMG (and Deloitte<sup>177</sup>) is limited. CSMG’s historical trend analysis did not provide sufficient evidence to conclude the existence or absence of long term trends in the fault rates.

5.101 We have examined the data provided by Openreach for CSMG’s analysis for the WLR, SMPF and MPF products up to 31 August 2013. This information is presented in Figure 5.2 and Figure 5.3 below.

**Figure 5.2: Weekly fault volumes for WLR, WLR+SMPF and MPF (excluding SFI, BBB, CDTA, CDTnA faults, faults not caused by the Openreach network and faults for other services (such as NGA))**



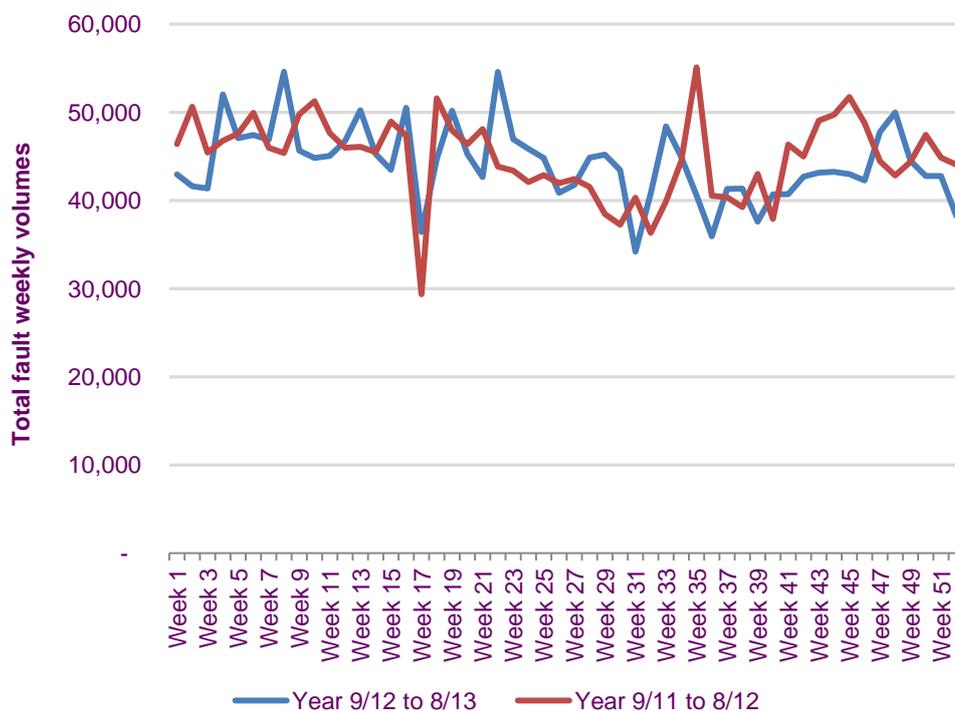
Source: Data provided by Openreach for CSMG analysis

<sup>175</sup> Monthly service meetings between Ofcom, Openreach and the OTA.

<sup>176</sup> Paragraph 3.19, CSMG, Fault Rates Report.

<sup>177</sup> Deloitte’s analysis for Openreach covering a slightly different 2 year period produced very similar fault rates to CSMG’s estimates.

**Figure 5.3: Twelve month interval analysis for total fault volumes (excluding SFI, BBB, CDTA, CDTnA faults, faults not caused by the Openreach network and faults for other services (such as NGA))**



Source: Data provided by Openreach for CSMG analysis

5.102 Figures 5.2 and 5.3 above show:

- a small fall in total fault volume for the aggregate of WLR, WLR+SMPF and MPF over the period September 2011 to August 2013;
- a small increase in MPF faults attributable to increasing system size and the number of new provisions;
- a small reduction in WLR+SMPF faults attributable to reducing system size and fewer new provisions (than MPF), approximately cancelling out the increase in MPF faults in the overall data; and
- although the pattern of variation is different, the fault volumes for the year September 2012 to August 2013 are similar to those for the year September 2011 to August 2012.

5.103 Figure 5.2 and Figure 5.3 do not support Openreach’s view of increasing fault volumes. However, this may be because we have only included the key products included in the Charge Control, not overall fault volumes (we have excluded, for example, chargeable products such as SFI and BBB).

5.104 In any case, fault volumes are dependent on both fault rates and the volume of each product (system size). As such, if the variations identified above are only due to changes in system size, this would suggest the fault rates were flat. However, if there were underlying changes in fault rates we would want to understand the basis for these changes and how they might change over the period of the review.

- 5.105 The results of the CSMG analysis appear to be broadly consistent with the results in the Deloitte report which was commissioned by Openreach. Nonetheless, as discussed above, Openreach has raised questions regarding the CMSG analysis which we will need to consider further.
- 5.106 We consider below the impact the following factors may have on fault rates during the Charge Control period:
- weather patterns;
  - broadband usage;
  - ILFs;
  - ELFs; and
  - any other factors.

### Weather patterns

- 5.107 TalkTalk said that the figures published in Figure A10.5 of the July 2013 FAMR Consultation (represented in Table 5.2 above) indicated a 53% increase in faults since 2009.<sup>178</sup> It said that such a large increase could not be explained only by weather patterns or broadband usage. In Figure A10.5, the 2009 fault volume was derived from nine months of data and pro-rated for the whole year. We have reviewed our figures in light of TalkTalk's highlighting of the increase in fault rates. We have explained above that the data for 2009 may be questionable and this could change the increase to within the range 20% to 53%.
- 5.108 However, TalkTalk suggested that only up to 6% change could be due to weather effects.<sup>179</sup>
- 5.109 As the exact level of faults in 2009 is unclear, so is the change in fault rates between 2009 and 2010. Between 2010 and 2012 there was an increase in faults (excluding NGA faults) of 400,000 and a 386mm increase in rainfall. Using the data presented in paragraph A10.68 of the July 2013 FAMR Consultation (i.e. that a 100mm increase in rainfall increases faults by 50,000)<sup>180</sup>, an increase of 386mm would lead to an increase of approximately 193k faults from 2010 to 2012, so that the proportion of the change in fault volumes from 2010 to 2012 due to rain could be up to 50%.<sup>181</sup> Therefore, we do not necessarily agree with the analysis of TalkTalk. We do, however, recognise that, as indicated by Sky, there appears to be periods when rainfall has declined and fault volumes have increased.

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<sup>178</sup> Figure A10.5, Ofcom, FAMR Consultation - Annex 10.

<sup>179</sup> Paragraph 2.16, TalkTalk Response to the July 2013 Consultation.

<sup>180</sup> Frontier Economics used this data to estimate the impact of changes between 2009 and 2012 to be 6%. Paragraph 2.22, Frontier Economics, Ofcom's LLU and WLR Charge Controls Proposals.

<sup>181</sup> The change is only 3% per annum as a proportion of the total fault volume in 2012. We note that the changes in fault volumes due to rainfall differences from year to year are a small proportion of the overall volume of faults, typically less than 5% (based on the 2009-2012 changes and volumes). Total fault volumes appear not to have changed by more than 20% from year to year since 1994.

5.110 Also, we said in our 2009 PFFO Statement that Openreach argued that investment in weatherproofing had significantly reduced the implications of bad weather on fault rates to the point where in 2008/09 the strong correlation between high rainfall and increased faults seen in previous years had been all but removed.<sup>182</sup> Therefore, we consider that rain was probably a contributory factor to changes in fault volumes between 2009 and 2012 but the exact impact of variation in rainfall on the level of faults is difficult to quantify.<sup>183</sup>

5.111 We have reviewed the three consultants' reports on climate change and weather submitted by Openreach to try to assess the impact the weather may have on fault volumes during the forthcoming three year Charge Control period. In summary our view is that these reports suggest:

- Whilst there is some consensus on changes in the UK's climate in the long term, this is likely to have limited short-term effects on Openreach's network. Similarly there are ten-year and shorter-term climate patterns causing increasing variability on the UK's weather but to what extent is still unclear.
- Although statistical observations suggest that the pace of increase in average precipitation may be slow, the spatial (regional) and temporal variability of the weather is gradually increasing, resulting in more frequent, localised extreme events such as floods and wind storms.
- 2012's annual precipitation level was only exceeded or equalled in 1960 and 2000, based on data collected since 1931. 2012's precipitation level is considered to represent an infrequent, high peak given that the high precipitation levels in 1960 and 2000 were not followed by one or more years with such high levels of precipitation.
- The reports do not support, or provide clear evidence, that short or medium term climate patterns affecting the UK's weather are expected to change within the next 2-3 years.

5.112 Based on information that we presented in figures A10.14 and A10.15 of the July 2013 FAMR Consultation we also observe that, since the year 2000, the UK weather has oscillated a number of times between some of the wettest and some of the driest years since records began in 1910.

5.113 Taking account of this evidence for the specific purposes of the present Charge Control review, we therefore consider that the available evidence suggests:

- there is little evidence that weather is likely to be materially worse in the forthcoming Charge Control period, compared to that experienced in the current Charge Control period;
- there is a possibility of a rise in the number of extreme events such as flooding and wind damage, all likely to be declared as MBORC. This covers a very small proportion of total fault volumes and we do not expect to change significantly. We

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<sup>182</sup> Paragraph A9.122, Ofcom, 2009 PFFO Statement.

<sup>183</sup> Without an actual figure for the level of faults in 2009, it is difficult to determine whether there was first a fall and then a rise in fault rates from 2009 through 2010 to 2011.

explain the current level of faults resolved via MBORC and our approach to MBORC in Section 3;

- Openreach has some control over changes in fault volumes associated with some adverse weather, as explained in the 2009 PFFO Statement<sup>184</sup>; and
- our analysis for the July 2013 FAMR Consultation, our further consideration explained above and stakeholder submissions suggest that a proportion of changes in fault volumes could be due to changes in the weather but other factors are likely to have played a more significant role in the changes in fault volumes in the past.

5.114 Therefore, whilst the evidence indicates that changes in rainfall may have an effect on fault rates, on balance we do not consider that these weather effects will lead to any significant rise in fault volumes during the forthcoming Charge Control period – i.e. to 2016/17. In addition, we do not consider we could reasonably forecast the changes in the weather for the Charge Control period or the impact it may have on the level of faults, to any level of accuracy.

### Broadband usage

5.115 Openreach said in its Consultation response that greater broadband usage is leading to an increase in customer problems with the services.<sup>185</sup> This has increased the demand for special investigation products (such as CDTA, CDTnA, SFI and BBB). However, Openreach argued this has not increased the number of copper line faults (as explained above in paragraph 5.21).

5.116 Deloitte's analysis also showed that there is no relationship between fault rates and broadband usage levels (Figure 29 in its report) although there appeared to be some small relationship between the volume of SFI and BBB products and broadband usage level.<sup>186</sup>

5.117 We recognise that there may be an increase in the use of SFI and BBB products but these are out-of-scope of the fault rates considered here as they are separate chargeable products and therefore not included within the Charge Control costs for the main rental services. It would therefore be incorrect to reflect increases in the use of these services in our analysis. Openreach has since indicated that where a special fault investigation does ultimately lead to a line fault being found, then no charge is made. However, Openreach has not provided evidence of either the number of faults where this may be relevant or how costs of faults initially reported via a special fault investigation are treated. As such, we are unable to assess whether any adjustment to fault rates should be made to reflect this point.<sup>187</sup>

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<sup>184</sup> Paragraph A9.122, Ofcom, 2009 PFFO Statement

<sup>185</sup> Paragraph 1.3.5, Openreach Response to the FAMR and July 2013 Consultations (Quality of Service).

<sup>186</sup> Figure 29, Deloitte, Fault Data Report.

<sup>187</sup> It is not clear whether the fault rates are incremented if Openreach finds a fault with its network, e.g. E/D-side, as a consequence of performing the investigation covered by one of these products (CDTA, CDTnA, SFI or BBB). Possibly it does not charge for the repair. It is not clear whether the data we have includes such faults because they were subsequently given clear codes that our

## In Life Faults

5.118 Figure 10 of the CSMG report (reproduced in Table 5.4 above) indicates that ILF rates increasing between 2011/12 and 2012/13 for each product. However, CSMG's ILF rate trend using a 4-week average (Figure 11 of CSMG's report) appears to show ILF rates are flat. These differences may be a result of the different methods of calculation.<sup>188</sup> We have carried out further analysis of the data used by CSMG to examine weekly fault rates.<sup>189</sup> This shows that:

- MPF ILF rate is broadly flat;
- WLR+SMPF ILF rate shows a very minor decrease; and
- WLR ILF rate is broadly flat.

5.119 A flat ILF rate for each product is consistent with what we would expect, because the underlying network configuration of the products is well established. The access network is also well established and so, to the extent it is properly maintained, we would not expect fault rates on network elements to vary significantly over time. We have discussed the level of preventative maintenance carried out by Openreach above and the possible impacts of external factors such as weather or increased broadband use above and have not found evidence to suggest these would lead to increasing fault rates.

5.120 Based on the evidence currently available we therefore consider that, for the purposes of the Charge Control, we would not expect changes in the ILF rate.

## Early Life Faults

5.121 Our analysis of the available evidence indicates that the long term trends in overall product fault rates are primarily due to the volume of ELF's, which is in turn dependent on ELF rates and the volume of provision activity (new or appropriate modify activity).

5.122 The analysis by CSMG and Deloitte (on behalf of Openreach), shows that the ELF rates for MPF and WLR+SMPF seem to be increasing whilst the ELF rate for WLR is decreasing or flat.<sup>190</sup>

5.123 Deloitte and CSMG both highlighted the increase in MPF ELF rates in their linear trend analysis but not the smaller increase in WLR+SMPF. From inspection of the trend in Deloitte's graph the rise in MPF ELF rates appears to us to have been of the

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analysis considers in scope, or whether they were given clear codes that are not in scope for our analysis.

<sup>188</sup> The data shown in Table 5.4 takes annual faults and divides them by the average system size over the year, whereas the weekly data shown in Figure 11 of the CSMG report uses 4 week average rates. See Paragraph 4.5-4.8 and Figures 10 and 11, CSMG, Fault Rates Report.

<sup>189</sup> Calculated as weekly faults divided by weekly system size for each product.

<sup>190</sup> Table 5.5 and 5.6 above for CSMG's analysis. Figure 12, Deloitte, Fault Data Report.

order of 40%.<sup>191</sup> Inspection of Deloitte's graph shows WLR+SMPF ELF rates also appear to rise, albeit by smaller amounts.

- 5.124 Deloitte suggested a level of correlation (correlation coefficient of 0.25) which it interpreted as indicating a higher incidence of customer switching order activities can be linked to higher ELF rates. CSMG investigated the specific transition type (i.e. last change in service product) and concluded that the type of transition was not a significant driver of ELFs. As discussed above the relationship between ELFs and certain transition types is being further investigated by the OTA after an initial review of possible causes of the apparently excessive level of early life failures.
- 5.125 Given the analysis by Deloitte for the period October 2011 to September 2013 and by CSMG for the period September 2011 to August 2013, we consider that the evidence suggests there has been a rise in MPF ELF rates over this period that was not mirrored by a similar rise in WLR+SMPF ELF rates. However, as for ILF rates above, it is not clear to us that such differences could be the result of particular differences in the characteristics of the product (for example, the use of different network elements). This might suggest that the underlying cause for the rise in MPF rates over the period from late 2011 is a systemic issue with MPF services such as a process failure or a significant change in working practices.
- 5.126 We sought further information from BT using our statutory information gathering powers on all external analysis commissioned by BT and all internally commissioned analysis in the last 3 years which analyses ELF rates.<sup>192</sup> Openreach's response included 15 reports covering a number of investigations into ELFs over the period October 2010 to October 2013. There was one report from December 2010 and one from November 2011. All the other reports were from 2012 or 2013. These reports highlight several potential causes of ELFs (and potential reasons for changes in ELF rates). These reports provide some evidence that Openreach processes may have contributed to increases in ELF rates, although other factors were also identified as having an impact.
- 5.127 The two reports from 2010 and 2011 focused on specific issues and did not present data on the number of faults, or the likely impact on fault volumes or rates that may result from the investigation. All the other reports used 2012 and/or 2013 data. The reports collectively highlight a wide range of issues concerning the possible causes of ELFs though most relate to Openreach's internal process and testing issues. These issues include:
- issues relating to frame work;
  - the testing approach of some CPs has highlighted faults on the Openreach network that were not picked up by Openreach's testing;
  - MPF use of the start of a stopped line process. The issues appear to relate to accurate recording of which lines have jumpers left in place, and how these are handled when these jumpers, or the equipment ports they were ultimately connected to, are re-used;

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<sup>191</sup> It is difficult to give a precise figure as the level of ELFs varies significantly from week to week. See Figure 12, Deloitte, Fault Data Report.

<sup>192</sup> Fifth QoS information request of 22 October 2013 addressed to and received from British Telecommunications plc.

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- for the period July 2012 to July 2013, LLU start of a stopped line and new provide, SMPF basic provide and WLR3 new provide were the largest contributors to ELF; and
- some of the reports indicate that non-visited orders also exhibit a higher ELF rate irrespective of product type and that appointed WLR orders irrespective of whether they are visited or visit saved also have a higher ELF rate than MPF.

5.128 Openreach indicated that further analysis of faults, including ELFs is currently underway within Openreach (in addition to work involving the OTA and other CPs) and that the reports should not be taken as offering final conclusions on the subject.

5.129 The internal investigations by Openreach and the work currently being undertaken by the OTA have provided some evidence that factors relating to processes within Openreach and between Openreach and CPs may have contributed to increases in the ELF rate, but the impact of these issues, compared to other issues outside Openreach's control is uncertain. Investigations are still ongoing.

5.130 For the purposes of the Charge Control, we consider that we have gathered the relevant available data and have carried out the appropriate analysis to attempt to understand changes in ELF rates. Our view is that there is some evidence to suggest that Openreach process issues are a factor in increasing ELF rates though the exact effect is unclear.

5.131 Our view is that, for the purposes of the Charge Control, we have not identified any underlying reason that would indicate that ELF rates will continue to change over the Charge Control period.

5.132 To the extent that the ELF rates and ILF rates are different, if the relative proportion of ELFs changed significantly over time, this could mean the overall fault rate should change over time. We have reviewed the forecasts in the July 2013 Consultation. These show that the level of new connections as a proportion of overall working system size for each product will have a much smaller change (in particular for MPF) than in the previous Charge Control period. In addition, assessing the differences between ILF rates and ELF rates on a like-for-like basis may not be straightforward. As illustrated by CSMG (and reproduced in Table 5.5 and 5.6), different approaches to calculating ELF rates can be used which result in very different figures.

5.133 We therefore do not consider that changes in the relative proportion of ELFs versus ILFs will have a significant impact on overall fault rates.

5.134 We have explained above that we do not propose to make a change to the base year costs. It could be argued that, where we consider that process issues have resulted in increasing ELF rates, we should not only flatten ELF rates over the period of the Charge Control but that we should also make an adjustment at least to remove the effect of such process issues. However, the extent to which increases are due to these issues is difficult to quantify. As such, any adjustment would be somewhat arbitrary.

#### Conclusion on fault rate trend during the Charge Control period

5.135 Based on the discussion above and the evidence currently available to us, our view is that:

- there is no underlying reason why fault rates (whether ILFs or ELFs) should change during the Charge Control;
- we do not consider that the relative proportion of ELFs versus ILFs should lead to a change in fault rates during the Charge Control;
- we have considered exogenous factors and whilst we accept that weather is a factor in fault rates we do not consider that there is evidence to suggest a change over the period or that would allow us make a reasonable assessment of potential fault rate changes due to weather in the future; and
- we do not consider that increasing or changed use of broadband would lead to an increase in the fault rates included within the Charge Control (though the demand for other products outside the Charge Control such as SFI and BBB may increase).

5.136 We therefore propose that fault rates should remain constant for the period of the Charge Control.

5.137 We note that these conclusions differ from the views of Openreach who consider there is a clear upward trend in fault levels and from other stakeholders who consider that existing faults are not at an efficient level. We, therefore, invite stakeholders to submit any evidence which they consider would allow us to further refine our analysis.

**Question 5.2:** *Do you agree that fault rates should remain constant throughout the Charge Control period based on our analysis above? Please provide reasoning for your answer.*

## Relative fault rates

5.138 In the Charge Control, the overall fault costs are allocated based on the relative fault rates of each service, and the volume of these services. Therefore, the relative fault rate of each product is an important consideration in the overall level of charges.

5.139 In considering the relative fault rates of the key products in the Charge Control, we have considered whether, based on the technical characteristics of the service, we would expect any difference in fault rates.

5.140 MPF and WLR+SMPF are used to provide consumers with voice plus broadband services. Given that there is no difference in E-side network, D-side network, drop wire and monopoly wiring<sup>193</sup> between MPF and WLR+SMPF, we see no obvious reason why fault rates for each of these segments would be different for MPF compared with WLR+SMPF. In addition, whilst there may be some differences in the provisioning activity on the frame for each of these products (and migrations between them), it is not clear why the fault rate related to frames would be significantly different for MPF compared with WLR+SMPF.

5.141 Line testing equipment is provided differently for MPF versus WLR+SMPF (and WLR).<sup>194</sup> As such, line testing faults could explain differences between the fault rates

<sup>193</sup> Monopoly wiring refers to wiring within the customer premise on the network side of the NTE.

<sup>194</sup> Test Access Matrix (TAM) equipment is used to test MPF lines but not WLR or WLR+SMPF lines.

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on different products. However, CSMG's analysis indicates that the fault rates for line testing equipment were zero for 2012/13.<sup>195</sup> As such, we would expect the fault rates for the MPF TAMs to be low compared to the overall fault rate of each product and so not a material factor in the overall product fault rate.

- 5.142 We also note that CSMG's analysis showed little correlation between line length or population density and faults so that, even to the extent that the services are used differently (i.e. MPF lines having a shorter length or being in areas with lower proportions of overhead delivery), the data does not suggest this causes a difference in fault rates by network segment.
- 5.143 Therefore, we would expect the overall fault rates for MPF and WLR+SMPF to be broadly the same.
- 5.144 The analysis by CSMG for overall faults rates, set out above in Table 5.7, supports this expectation, showing very similar fault rates for MPF and WLR+SMPF in both 2011/12 and 2012/13.
- 5.145 However, CSMG's analysis shows different ELF and ILF rates between the products. For example, CSMG's analysis of ELF rates (shown in Table 5.5) shows MPF has a higher ELF rate than WLR+SMPF, whereas its analysis of ILF rates (shown in Table 5.4) shows MPF has a lower ILF rate. CSMG specifically investigated a number of causes for the possible differences in fault rates. For ILF rates it found no relationship with network segment, line length or population density. For ELF rates it found no relationship with network segment and a small but not significant relationship with service change on a line. Deloitte found a similar relationship with customer driven interventions (change of service on a line) but interpreted it as significant.
- 5.146 It is not clear why there would be differences and we have not been able to find reasons for differences through analysing the data available to us.
- 5.147 This could be important if the relative proportions of young lines changes over the period of the Charge Control. For example, if the proportion of young lines in the MPF base reduces, there could be a change the overall fault rate.
- 5.148 In the July 2013 Consultation we said that LLU operators' market shares were unlikely to change significantly<sup>196</sup> and that only very limited future LLU rollout is likely to occur.<sup>197</sup> We said that we expected LLU operators to largely complete the migration of their end users from WLR+SMPF to MPF during this Charge Control period.<sup>198</sup> These factors suggest that changes in the relative proportions of young lines (and therefore the contribution of ELFs) for MPF versus WLR+SMPF will reduce over time so that the impact of higher ELF rates will be reduced.
- 5.149 In addition, irrespective of the relative number of ELFs, we consider that there are good reasons for setting the rates for WLR+SMPF and MPF to be the same.
- 5.150 We do not consider that there are underlying engineering reasons to explain different fault rates between WLR+SMPF and MPF. However, if the ELF rate is higher than

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<sup>195</sup> See Figures 3 and 4, CSMG, Fault Rates Report.

<sup>196</sup> Paragraph A8.47, Ofcom, July 2013 Consultation.

<sup>197</sup> Paragraph A8.49, Ibid.

<sup>198</sup> Paragraph A8.65, Ibid.

the ILF rate, the product with a higher proportion of ELF's would have a higher overall fault rate. Accurately reflecting the ratio of ELF's where different products have a different relative proportion of new provisions in the fault rate could make one product relatively less attractive against the other product. It would also tend to over-state the costs compared to the costs where customers are more evenly distributed between CP's. If higher costs for one product versus another were reflected at the retail level, this could reduce the incentive for customers to switch, even though the services they are purchasing (voice plus broadband) would be the same and the underlying network would suggest no differences in costs should exist. Therefore, in order to ensure that a CP's choice of what wholesale products to purchase (WLR+SMPF v MPF) is based on which is most efficient, and not distorted by inappropriate, and unsustainable, fault cost allocations, we believe that relative fault rates should be equalised.

- 5.151 In the July 2013 Consultation, we also said that having different relative rates for MPF versus WLR+SMPF could also lead to distorted incentives on BT, if BT knows that the price of MPF will rise in future, relative to WLR+SMPF, if it reports/allocates more faults to MPF. Setting MPF and WLR+SMPF relative fault rates based on our best view of the underlying costs (which in this case suggests the relative fault rates should be equalised) rather than BT's reported costs, is likely to ensure that BT has the incentive to report faults and fault costs accurately.
- 5.152 Therefore, we propose that equalising the rates for MPF and WLR+SMPF is appropriate in reflecting the underlying network costs used to supply the two products, and is consistent with providing the correct incentives for BT and other CP's in order to promote competition at the retail level.

### WLR and SMPF fault rates

- 5.153 CSMG was not able to derive reliable and consistent fault rates for SMPF or to accurately and reliably disaggregate the faults on WLR+SMPF lines into individual WLR and SMPF faults. In addition, we remain concerned that faults on lines with WLR and SMPF may not be reported correctly (that is, determining whether a fault is properly a WLR fault or an SMPF fault at the time of reporting the fault is problematic).
- 5.154 We have set out above several concerns we have with the underlying data provided by Openreach. However, it is not clear that there is an alternate approach to establishing a rate for WLR other than to base it on the data provided by Openreach as analysed by CSMG. Subject to Consultation responses, we do not think that further analysis of the data we have, or further data gathering, would be able to address our concerns explained above. Nor do we think that estimating the differences through an analysis of the different network segments used by the different products would provide a more reasonable approach as this would again, ultimately, need to rely on the same data set to estimate differences in fault rates where network segments are used differently.
- 5.155 We have used the data presented in CSMG's report to calculate the relative fault rate of WLR (and therefore to derive the relative SMPF rate). A number of different approaches could be taken. As we have explained above, we propose to equalise the rates for MPF and WLR+SMPF. We could therefore use MPF rates, WLR+SMPF rates or an average. We could also use the data for one year or average across both years. Finally, we could use overall fault rates, ILF rates or ELF rates. As discussed above, the ILF rate data in the CSMG report appears to have been stable for WLR

and MPF over the two years. On this basis we have calculated the ratio of WLR ILF rates to MPF rates, which equals 0.87.

5.156 We have discussed above in length our proposal to equalise fault rates for WLR+SMPF and MPF. However, our model allocates costs to WLR and SMPF separately. As such, for a line with WLR+SMPF, costs will be allocated to WLR and to SMPF and so we need a separate SMPF rate. As WLR+SMPF must equal 1, and WLR is equal to 0.87, this means that the SMPF rate is 0.13.

**Question 5.3:** *Do you agree with our proposed approach to equalising relative fault rates, with MPF = 1, WLR+SMPF = 1, WLR only = 0.87 and SMPF = 0.13? Please provide reasoning for your answer.*

## Other comments from stakeholders

5.157 TalkTalk suggested we should include the level of faults in any minimum service standard.<sup>199</sup>

5.158 We appreciate the motivation for such a request given TalkTalk's concern about what they consider to be under-investment and fault management failures. However, as we have set out above we do not consider there is adequate information as to what an efficient fault level should be.

5.159 Equally, we do not have any evidence that Openreach has not sought to minimise existing fault levels. As such, in reaching our proposals on fault rates for the purposes of the Charge Control we have not considered the effects on costs or fault levels of a minimum service standard.

5.160 There is active investigation by Openreach and the OTA as to fault causes and this may lead to changes in fault management. We welcome this work and will consider what, if any, further work could be undertaken in this area to provide useful insights into managing fault rates more generally.

## Our provisional conclusions on fault rates

5.161 On the basis of the evidence and analysis presented above, for the purposes of the Charge Controls we propose:

- the overall level of fault rates in the base year should be what was actually experienced and which is consistent with the costs that we assume in the base year;
- the fault rates should remain constant throughout the Charge Control period (i.e. the fault rates in 2016/17 should be assumed to be the same as those for the base year); and
- the relative level of fault rates for the MPF and WLR+SMPF should be equalised and the relative level of the fault rate for WLR-only should be 0.87 (so that the SMPF rate is 0.13).

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<sup>199</sup> Paragraph 2.7, TalkTalk Response to the FAMR Consultation (Quality of Service).

5.162 The relative fault levels we propose to use as our base case in the Charge Control model are as shown in Table 5.8 below. Further detail on fault rate allocation and our cost modelling approach is set out in paragraphs A12.18 to A12.23 of Annex 12.

**Table 5.8 Proposed relative fault levels**

Product	Relative fault levels
MPF	1.0
WLR	0.87
SMPF	0.13
WLR+SMPF	1.0

5.163 Due to the methodology used to allocate repair-related costs in the Cost Model, we are not able to isolate the impact of our fault rate base case proposal from the impact from our service level differential base case proposal set out in Section 4.<sup>200</sup>

5.164 In Table 5.9 below we set out the combined impact of the fault rate and service level differential base cases on unit costs. This impact is compared to the base case proposals we included in the July 2013 Consultation. The impact on overall prices is set out in Table 8.4 of Section 8.

**Table 5.9: Combined impact of proposed base cases for relative fault rates and service level differential on 2016/17 unit costs (FAC)**

Faults and Service Level Base Cases	
	Cost
MPF Rental	£1.36
WLR Rental	-£0.44
SMPF Rental	-£0.59

Source: Ofcom

5.165 For the purposes of this Consultation we have decided not to include a fault rates upper range scenario.

5.166 We expect shortly to issue a statement in response to the remittal directions from the Competition Appeal Tribunal of 29 April 2013 following the appeal of the current

<sup>200</sup> We are unable to isolate the impact of our proposed allocation changes for our faults and service level differential proposals. This is because the two proposals have a compounding effect on each other in the Cost Model. This reflects the fact that additional faults allocated to MPF would be more costly than additional faults for WLR. This is due to the fact that the faults would be fixed in line with Service Level 2, rather than Service Level 1 requirements. The two proposals are therefore inter-dependant.

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charge control (for the period to March 2014) in order to implement a direction from the Competition Appeal Tribunal, which was based on the determination by the CC in relation to fault rates arising out of the Sky-TalkTalk appeal.<sup>201</sup> Ofcom's statement will relate to faults and ELF rates for the period of the current charge control and reflects the CC's findings in relation to the modelling approach adopted for the current charge control. We consider that on the evidence we have gathered, our proposed approach to fault rates described above is the appropriate way to treat fault rates (and therefore costs) on a forward looking basis for the purpose of setting the next charge control.

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<sup>201</sup> See British Sky Broadcasting Limited and TalkTalk Telecom Group Plc v Office of Communications, Case1192/3/3/12 –Determinations, 27 March 2013, [http://catribunal.org/files/1192-93\\_BSkyB\\_CC\\_Determination\\_270313.pdf](http://catribunal.org/files/1192-93_BSkyB_CC_Determination_270313.pdf)

## Section 6

# Charge Control Design

## Introduction

6.1 This Section covers:

- 6.1.1 firstly, our basket design proposals;
- 6.1.2 secondly, our proposals on discounts for simultaneously commissioned and fulfilled services, including new proposals for discounts relating to simultaneous WLR and SMPF connection services (see paragraphs 6.101 to 6.127); and
- 6.1.3 thirdly, our proposals to introduce a new charge control on Caller Display. This will substantially reduce the Caller Display charge from £6 currently to between £0.35 to £0.50 from the start of the control period (see from paragraph 6.128 below).

## Basket design

6.2 Below we set out our revised proposals in relation to charge controls for baskets of services. In particular:

- the treatment of (i) MPF New Connections, (ii) SMPF New Provide, (iii) Hard Ceases, (iv) other LLU ancillaries, (v) Co-Mingling services, (vi) Tie Cables, and (vii) WLR New Connections;
- the measures to prevent the gaming of charges within ancillary services baskets; and
- the starting charges for basket controlled services for the 2014-2017 charge control.

6.3 We start by summarising the new proposals which form the basis of this consultation. Then, for each group of revised proposals, we outline the previous proposals set out in the July 2013 Consultation, summarise the comments and responses from stakeholders to the July 2013 Consultation, and set out our response to those stakeholder comments together with our reasoning in support of our revised proposals.

## Summary of our revised proposals

6.4 Having considered stakeholder responses to our basket proposals in the July 2013 Consultation and, in light of further analysis, we have revised the proposed structure of the basket controls. In summary, we now propose to set charge controls on six baskets of services, namely:

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- MPF New Provides basket (comprising the following services in Openreach's price list: MPF Standard New Provide<sup>202</sup>, MPF Stopped Line Provide (MPF SLP)<sup>203</sup> and MPF Working Line Takeover (MPF WLTO));
- Hard Ceases<sup>204</sup> basket (comprising the following services in Openreach's price list: "MPF MDF Remove Jumper Order Singleton Charge", "MPF MDF Remove Jumper Order Bulk Charge", "SMPF MDF Remove Jumper Order Singleton Charge" and "SMPF MDF Remove Jumper Order Bulk Charge");
- Other LLU ancillaries basket (comprising the services listed in Annex 15: Draft legal instruments, in Part 4 of the Annex to Condition 7A);
- Co-Mingling New Provides and Rentals basket (comprising the services listed in Annex 15: Draft legal instruments, in Part 5 of the Annex to Condition 7A);
- Tie Cables basket (comprising the services listed in Annex 15: Draft legal instruments, in Part 1 of the Annex to Condition 7A); and
- WLR Connections basket (comprising the following services in Openreach's price list: WLR Standard Connection<sup>205</sup> and WLR Start of Stopped MPF Line<sup>206</sup>).

6.5 For the services in the "Hard Ceases" and "Other LLU ancillaries" baskets it is our understanding that the costs associated with providing the MPF and SMPF variants are broadly similar. Further, at the current time Openreach prices the MPF and SMPF variants the same. We are therefore proposing an additional constraint on these baskets such that the price of the MPF and SMPF variants of the various services should be the same.

6.6 Figure 6.1 below sets out the new proposals diagrammatically. The basket revenue in 2011/12 is shown in square brackets (redacted or ranges provided where confidential). The references to  $X_1, \dots, X_6$  are to different values of X in the CPI-X control which would be applied to each of the six baskets.

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<sup>202</sup> By MPF Standard New Provide, we mean "MPF Connection charge - New Provide Standard" in Openreach's price list.

<sup>203</sup> By MPF Stopped Line Provide, we mean "MPF Connection Charge Stopped Line Provide" in Openreach's price list.

<sup>204</sup> A hard cease is a cease which involves jumpering work, and should only occur once the respective soft cease (i.e., the line is ceased via software but jumpers remain in place) has been executed.

<sup>205</sup> By WLR Standard Connection, we mean "Supply of new Basic line - Per line" in Openreach's price list.

<sup>206</sup> By WLR Start of Stopped MPF Line, we mean "Supply of new line - Per line - using previously stopped LLU MPF line" in Openreach's price list.

**Figure 6.1: A six-basket structure**

<b>MPF New Provides basket (CPI-X1)</b> [REDACTED] [£55m-65m] - MPF Standard New Provide [REDACTED] [£20m-£30m]; - MPF Stopped Line Provide (MPF SLP) [REDACTED] [£25m-£35m]; - MPF Working Line Takeover (MPF WLTO) [REDACTED] [£0-£10m].	
<b>Hard Ceases basket (CPI-X2)</b> [REDACTED] [£15m-£25m]	
- MPF MDF Remove Jumper Order Singleton [REDACTED] [£0-£10m]; - MPF MDF Remove Jumper Order Bulk [REDACTED] [£0-£10k].	- SMPF MDF Remove Jumper Order Singleton [REDACTED] [£10m-£20m]; - SMPF MDF Remove Jumper Order Bulk [REDACTED] [£0-£10m].
<b>Other LLU ancillaries basket (CPI-X3)</b> [REDACTED] [£50m-£110m]	
- MPF Tie Pair Modifications; - Cancellation of MPF orders; etc.	- SMPF Tie Pair Modifications; - Cancellation of SMPF orders; etc.
<b>Co-Mingling New Provides and Rentals basket (CPI-X4)</b> [REDACTED] [£30m-£55m] - MPF Hostel Rentals [REDACTED] [£20m-£30m]; - MPF Room Build [£19m].	
<b>Tie Cables basket (CPI-X5)</b> [£28m]	
<b>WLR Connections basket (CPI-X6)</b> [£27m] - WLR Standard Connection [N/a]; - WLR Start of Stopped MPF Line [N/a].	

Note 1: MPF Hostel Rentals and MPF Room Build correspond, respectively, to “Co-Mingling Rentals” and “Co-Mingling New Provides” in BT’s 2012/13 RFS.

Note 2: the complete list of individual charges controlled in Other LLU ancillaries basket is available in Annex 15: Draft legal instruments, in Part 4 of the Annex to Condition 7A.

Source: 2011/12 revenues in square brackets taken from the 2012/13 Compliance Statement and BT’s 2012/13 RFS.

6.7 The proposed values of X for each of the baskets in our base case are as shown in Table 6.1 below.

**Table 6.1: Proposed LLU/WLR basket charge controls**

Basket/Service	Control for 2014/15 to 2016/17, December 2013 Consultation (base case)	Control for 2014/15 to 2016/17, July 2013 Consultation (base case) <sup>207</sup>
MPF New Provides	CPI -1.75%	CPI-10.25% (individual charge control on MPF Standard New Provide)
Hard Ceases	CPI -9.25%	CPI-8.5% (charge controlled in MPF and SMPF ancillaries baskets)
Other LLU ancillaries	CPI -5%	CPI-8.5% (charge controlled in "MPF ancillaries" and "SMPF ancillaries" baskets)
Co-Mingling New Provides and Rentals	CPI +1.75%	CPI-10.75% (previously named Co-Mingling, which included Tie Cables)
Tie Cables	CPI -8.5%	CPI-10.75% (included in the Co-Mingling basket)
WLR Connections	CPI -7.25%	CPI-11.75% (individual charge control on WLR Standard Connection)

Source: Ofcom

- 6.8 The main reason why the basket controls are different (i.e., the values of Xs are now smaller for most of the baskets) is that we are now computing the values of X taking into account the latest available charges published on Openreach's website, which are generally lower than the charges used in the July 2013 Consultation (see paragraphs 6.86-6.100 in this Consultation on starting charges for basket controlled services, for further details). There are also some basket-specific reasons, related to the new composition proposed for each basket, that justify the differences.<sup>208</sup>

<sup>207</sup> In the July 2013 Consultation: MPF New Provides comprised only the individual service MPF Standard New Provide, while MPF WLTO and MPF SLP were charge controlled in the MPF ancillaries basket; MPF and SMPF Hard Ceases were, respectively, in the MPF and SMPF ancillaries baskets; Tie Cables were in the Co-Mingling basket; WLR Connections comprised only the individual service WLR Standard Connection, while WLR Start of Stopped MPF Line was not charge controlled.

<sup>208</sup> For example, the MPF New provides basket now includes MPF WLTO and MPF SLP which are cheaper services than MPF Standard New Provide, so the average charge for that basket has decreased (due to the change in the basket composition), but our cost forecast in 2016/17 is essentially the same.

## Revised proposals for LLU ancillaries baskets and MPF New Provides

### Proposals in July 2013 Consultation

- 6.9 In the July 2013 Consultation<sup>209</sup> we proposed setting three separate basket controls for:
- the MPF ancillary services; covering services used only with MPF, including MPF single/bulk jumper removals;
  - the SMPF ancillary services; covering services used only with SMPF, including SMPF single/bulk jumper removals; and
  - the Co-Mingling services; covering services used by purchasers of both MPF and SMPF services, including services required to locate equipment at Openreach's local exchanges.
- 6.10 Our approach to calculating the Xs for the MPF and SMPF ancillary baskets was based on the use of proxies for the services for which we did not have data.<sup>210</sup>
- 6.11 We proposed to set the same value of X for the MPF and SMPF ancillary baskets based on the pooled costs and revenues of MPF and SMPF Ceases and MPF New Provides as in BT's 2011/12 RFS.<sup>211</sup>
- 6.12 In the July 2013 Consultation we also proposed:
- an individual charge control on MPF Standard New Provide, with a glide path to align costs and revenues by 2016/17;
  - to include MPF SLP and MPF WLTO in the MPF ancillary basket<sup>212</sup>; and
  - to remove MPF Expedite and SMPF Expedite services from the ancillary baskets and impose a safeguard cap at CPI-0% on each LLU Expedite service charge, but not on WLR Expedite (launched on 22 July 2013).

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<sup>209</sup> Available at [http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/summary/LLU\\_WLR\\_CC\\_2014.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/summary/LLU_WLR_CC_2014.pdf).

<sup>210</sup> See July 2013 Consultation, paragraphs 4.197-4.212, p. 108-112, for further details.

<sup>211</sup> See July 2013 Consultation, p. 108-112, heading "Our response: setting the cap for the ancillary services" in Section 4, for further details.

<sup>212</sup> In the absence of 2011/12 revenue information, the fact that the revenues of MPF SLP and MPF WLTO were particularly small in 2008/2009 and 2009/2010 suggested that these should be controlled in a basket with other MPF ancillaries.

## Responses to the July 2013 Consultation

### MPF New Provides

- 6.13 Openreach<sup>213</sup> said that it preferred a single ancillary basket combining the services in the SMPF ancillary services basket and MPF ancillary services basket. Openreach explained that this would allow “*comparable products to have the same price, while allowing prices of substitute products to be set in a way to drive optimal CP product choices and thereby maximise the use of resources*”.
- 6.14 Openreach also said that it was particularly concerned about our proposal to set a separate charge control on MPF Standard New Provide. In particular, Openreach said that a problem would arise under these proposals in that MPF Standard New Provide can be used by CPs instead of MPF SLP or MPF WLTO and gives rise to an unnecessary engineer visit. It argued that the relative charge of MPF Standard New Provide compared to potentially substitutable services (MPF SLP and MPF WLTO) does not reflect costs, and that this is driving inefficient behaviour. It believed the grouping of services into different charge controls will make this worse. The difference in controls proposed for MPF Standard New Provide and the MPF ancillary basket (which in our July proposals covered MPF SLP and MPF WLTO, among other MPF ancillaries) would mean that either the charge differential could not be maintained or that Openreach could not recover its efficiently incurred costs.<sup>214</sup> Table 6.2 below summarises the July 2013 Consultation proposals for these controls.

**Table 6.2: MPF Standard New Provide, MPF WLTO and MPF SLP current charges and charge controls**

Services	Current charge (£) (15/10/2013)	July 2013 Consultation
MPF Standard New Provide	45.53	CPI-10.25% (individual control)
MPF WLTO / MPF SLP	37.57	CPI-8.5% (MPF basket control)
Difference	7.96	

Source: Ofcom, and Openreach price list as at 15 October 2013

<sup>213</sup> See Openreach’s response (30 September 2013), p. 48-51,

<http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Openreach.pdf>.

<sup>214</sup> Openreach argued that all other MPF ancillaries basket prices should be reduced by CPI-8.5% to ensure continued alignment with the comparable services in the SMPF ancillaries basket, which is proposed to be subject to a CPI-8.5% charge control. Given the alignment and the individual control on MPF Standard New Provide at CPI-10.25%, this would imply that to maintain the existing price differential, Openreach would be unable to recover the costs that it was entitled to receive.

## Hard Ceases

- 6.15 [X]<sup>215</sup> preferred separate controls for the MDF Remove Jumper Order Singleton Charge and the MDF Remove Jumper Order Bulk Charge on the basis that distinctly separate services should be treated as such and that Ofcom should avoid the potential for cross subsidy.
- 6.16 Openreach<sup>216</sup> preferred the charges for these services to be controlled in the respective MPF and SMPF ancillaries baskets (the status quo).

## Other LLU ancillaries

- 6.17 With the exception of Openreach, which preferred a single ancillary basket combining the SMPF ancillary basket and MPF ancillary basket, all stakeholders agreed in general with our proposal to control MPF and SMPF ancillaries in separate baskets.
- 6.18 Consistent with our July 2013 Consultation proposals, TalkTalk considered that there should be one basket for MPF ancillaries and one for SMPF ancillaries. It said: *“Separation is vital given that MPF is used almost exclusively externally and SMPF is used predominantly internally. If these services were in a single basket Openreach would have a significant incentive to raise the price of MPF services and lower the price of SMPF services (whilst remaining within the overall control).”*<sup>217</sup>
- 6.19 TalkTalk noted *“in respect of these ancillary baskets that the Xs are set based on modelling of the glidepath required to align current prices with forecast cost in 2016/17 rather than setting X to equal the efficiency gain which was outlined as an option in the consultation (paragraph 4.201)”*. It considered that *“Ofcom’s chosen approach is clearly superior since it is more accurate by taking into account prices being substantially above cost today (which would not be corrected under the other approach).”*<sup>218</sup>
- 6.20 [X]<sup>219</sup> argued that different ancillary services should be controlled separately and noted that the contents of the baskets appeared reasonable.

## Expedite connection services

- 6.21 Openreach<sup>220</sup> agreed with our proposal to remove MPF Expedite and SMPF Expedite from the respective ancillary basket and impose a safeguard cap at CPI-0% on each MPF and SMPF Expedite service charge. However, it said that *“a CPI-0% sub-cap still provides limited flexibility to align prices that are so far apart”* (currently, the MPF and SMPF Expedite charges are at £145.00 and £100.10, respectively).

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<sup>215</sup> [X]

<sup>216</sup> See Openreach’s response (30 September 2013), p. 57, paragraphs 324-327,

<http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Openreach.pdf>.

<sup>217</sup> See TalkTalk’s response (29 October 2013), paragraph 6.13, p. 47,

[http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/TalkTalk\\_Group.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/TalkTalk_Group.pdf).

<sup>218</sup> See TalkTalk’s response (29 October 2013), paragraph 6.31, p. 50-51

<sup>219</sup> [X]

<sup>220</sup> See Openreach’s response (30 September 2013), p. 57, paragraphs 320-323.

- 6.22 TalkTalk<sup>221</sup> said that did not consider that this lack of charge control on LLU Expedites was in consumers' interests. It said that "*BT has SMP so has the incentive and ability to price excessively*" and "*Openreach is significantly over-recovering cost*". Also, it said that for some customers higher quality is essential, rather than a "*nice to have*" and "*there is no justification for Openreach to make hugely excessive returns for offering these services*".

## Our revised proposals

### MPF New Provides

- 6.23 We now propose that there should be a basket comprising the individual services MPF Standard New Provide, MPF SLP and MPF WLTO, which we refer to as the MPF New Provides basket. Our proposal is to set the X for this basket based on the information in BT's RFS for the MPF New Provides service, which is an aggregate comprising the same three individual services as in the proposed MPF New Provides basket.
- 6.24 One of our objectives when setting charge controls is to set such conditions as appear to us 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. We consider that there is merit in Openreach's argument on MPF Standard New Provide, MPF SLP and MPF WLTO and that some potential inefficiencies in relative charges may be created as a result of the current regulatory treatment.<sup>222</sup>
- 6.25 To address this concern, we now propose to take MPF SLP and MPF WLTO out of the MPF ancillaries basket and put them in a separate basket together with the MPF Standard New Provide service. This new basket, comprising MPF SLP, MPF WLTO and MPF Standard New Provide, would give Openreach the flexibility to adjust the relative charges of these three services such that the charge differences could reflect cost differences, whilst having an appropriate price constraint imposed by the basket control.
- 6.26 Our proposal has another advantage in that the costs used in the calculation of the X for the basket would match perfectly the services in the MPF New Provides basket. This is because BT's RFS service "MPF New Provides" exactly comprises the individual services MPF Standard New Provide, MPF WLTO and MPF SLP.
- 6.27 We also note that revenues from MPF SLP and MPF WLTO in 2011/12 were significantly higher than in 2008/09 and 2009/10.<sup>223</sup> The increasing importance of these services is an additional reason to put them in a basket with the MPF Standard New Provide.

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<sup>221</sup> See TalkTalk's response (October 2013), p. 52, paragraphs 6.35-6.38.

<sup>222</sup> In the July 2013 Consultation we proposed an individual control of CPI-10.25% for MPF New Provide, while MPF WLTO and MPF SLP would be in the MPF basket under a charge control of CPI-8.5%. These proposals could decrease the charge differential between MPF New Provide and the potentially substitute services, thus, not reflecting the cost differential and potentially driving inefficient behaviour.

<sup>223</sup> See 2012/13 BT's Compliance Statement.

- 6.28 Another benefit from the establishment of the MPF New Provides basket is that the remaining services in the MPF and SMPF ancillaries baskets become more symmetric with each other, i.e., the remaining services in the MPF and SMPF ancillaries baskets would be largely consistent (see subsection on “Hard ceases and other LLU ancillaries” below for further details). This also strengthens the argument in favour of applying the same value of X for the MPF and SMPF ancillaries baskets (see below).<sup>224</sup>
- 6.29 We think that the constraints that we propose for the MPF New Provides basket will operate to prevent Openreach setting inappropriate charge differentials for the following reasons.
- 6.29.1 First, services in the MPF New Provides basket are potentially substitutable and if there is a relative increase in the charge for one service, the charges for the alternative services must adjust accordingly so that the overall basket constraint is satisfied.
- 6.29.2 Second, we propose to have sub-caps at  $CPI-X+7.5\%$  (see from paragraph 6.75 below for our reasoning on sub-caps) which will limit the rate of change in charges and, coupled with the overall basket control, restrict the scope to game the controls via the differential between charges in the basket.
- 6.30 We have considered other options to address the concern that Openreach has raised about inefficient use of different MPF New Provide services (i.e., MPF Standard New Provide, MPF SLP and MPF WLTO), such as individual controls on MPF SLP and MPF WLTO. However, there is no cost (FAC or LRIC) information available at this level of granularity, so it would be difficult to individually charge control these services with any accuracy. Alternatively, we could use MPF Standard New Provide to calculate the appropriate X for MPF SLP and MPF WLTO, however, reducing these service charges by the same percentage would still lead to a reduced charge differential (between MPF New Provide and MPF SLP, and MPF New Provide and MPF WLTO), as pointed out by Openreach.<sup>225</sup> Therefore, we consider the proposal set out above to be the most appropriate way of dealing with the concern raised by Openreach.

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<sup>224</sup> Note that, in the July 2013 Consultation, the proposed MPF ancillaries basket comprised MPF WLTO, MPF SLP, MPF Hard Ceases and a set of “other MPF ancillaries” for which we do not have cost information, while the proposed SMPF ancillaries basket comprised services related to SMPF Hard Ceases and a set of “other SMPF ancillaries” comparable to “other MPF ancillaries”. By removing MPF SLP and MPF WLTO from the MPF ancillaries basket, the MPF ancillaries basket becomes more similar to the SMPF ancillaries basket.

<sup>225</sup> See Openreach’s response, paragraph 277, p. 50,

<http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Openreach.pdf>.

### Hard ceases and other LLU ancillaries

- 6.31 Given our proposal to remove MPF SLP and MPF WLTO from the MPF ancillaries basket and place them in a specific MPF New Provides basket, the remaining services in the MPF and SMPF ancillaries baskets would be largely consistent.<sup>226</sup> They would consist of the following services (both the MPF and SMPF equivalents):
- MDF Remove Jumper Order Singleton Charge;
  - MDF Remove Jumper Order Bulk Charge;
  - Tie Pair Modification (3 working day lead time Re-termination);
  - Tie Pair Modification (Multiple Re-termination);
  - Cancellation of orders for Provide, Migration, Modification or Amend;
  - Amend orders. Allowable change to Order; and
  - Standard line test.
- 6.32 However, for the reasons set out below we consider that it would be appropriate to further divide up these remaining services. We propose to set a charge control over a basket of “Hard Ceases” services comprised of MPF and SMPF MDF Remove Jumper Order Singleton Charge and MDF Remove Jumper Order Bulk Charge. In addition to the basket control, we propose alignment of charges between MPF and SMPF ancillaries requiring broadly similar engineering activity (see Table 4.26 and Table 4.28 in July 2013 Consultation).
- 6.33 One reason we now propose to separate out the Hard Ceases services into their own basket is due to their relative importance. Hard ceases have grown over time.<sup>227</sup> We now consider that revenues are sufficiently large to warrant regulating these services in separate baskets (see MPF and SMPF Ceases’ revenues in BT’s 2012/13 RFS, p. 78).<sup>228</sup>
- 6.34 Our proposal also has the advantage that the costs and revenues used in the calculation of the X would now match the services in the Hard Ceases baskets. This is because BT’s 2012/13 RFS service “MPF Ceases” comprises the individual

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<sup>226</sup> Note that the “Other SMPF ancillaries basket” also comprises the service “SMPF Flexi Cease Fault Investigation Charges”, however, purchases of this service are negligible (revenue of [REDACTED] in 2011/12, BT’s 2012/13 Compliance Statement).

<sup>227</sup> See revenues in 2008/09, 2009/10 and 2011/12 for MPF and SMPF MDF Remove Jumper Order Singleton Charge, and MPF and SMPF MDF Remove Jumper Order Bulk Charge in the Eleventh s.135 to BT, Template 5. In 2008/09, the revenues for MPF MDF Remove Jumper Order Singleton and Bulk Charges were, respectively, [REDACTED] and [REDACTED]. In 2011/12, the figures for the same services were, respectively, [REDACTED] and [REDACTED]. In 2008/09, the revenues for SMPF MDF Remove Jumper Order Singleton and Bulk Charges were, respectively, [REDACTED] and [REDACTED]. In 2011/12, the figures for the same services were, respectively, [REDACTED] and [REDACTED].

<sup>228</sup> BT’s 2012/13 RFS available at

<http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2013/CurrentCostFinancialStatements2013.pdf>. Per BT’s 2012/13 RFS, in 2012/13, the revenues for MPF and SMPF Ceases are, respectively, £11m and £3m.

services in the MPF Hard Ceases basket, and the RFS service “SMPF Ceases” comprises the individual services in the SMPF Hard Ceases basket.<sup>229</sup>

- 6.35 We propose to set the value of X for the Hard Ceases basket, based on the pooled costs and revenues of BT’s RFS services of MPF and SMPF Ceases. We consider that this is appropriate because the MPF and SMPF charges are currently aligned, and there is a high level of similarity in terms of engineering activity involved in the MPF and SMPF variants of the Hard Ceases and we would therefore expect the costs to be similar.
- 6.36 In relation to the remaining MPF and SMPF ancillaries we propose to group them together into a basket of “Other LLU ancillaries” and set a charge control over that basket. In addition to the basket control, we propose alignment of charges between MPF and SMPF services requiring broadly similar engineering activity.
- 6.37 For these remaining MPF and SMPF ancillaries services there is no robust cost information available at a granular level. We do not think it would necessarily be appropriate to use the same X derived for the Hard Ceases basket on the charges for other MPF and SMPF ancillaries. This is because the other ancillaries may have different misalignments between charges and costs compared to the Hard Ceases. Without any good evidence on the degree of charge-cost misalignment for the other ancillaries we propose to use BT’s overall efficiency rate to determine the value of X for the other ancillaries basket.
- 6.38 Splitting Hard Ceases from other LLU ancillaries would also address the concerns from one respondent (see paragraph 6.15) that distinctly separate services should be treated as such.
- 6.39 Also, we note that there are no apparent disadvantages from splitting Hard Ceases from other LLU ancillaries. The common costs between Hard Ceases and the other LLU ancillaries appear to be small.<sup>230</sup> Therefore, no pricing efficiencies should be lost.
- 6.40 We acknowledge TalkTalk’s response that an approach to computing Xs for the ancillary baskets taking into account the extent to which current charges may not be aligned with current costs would, in principle, be more appropriate than setting X equal to the overall efficiency rate. However, the remaining LLU services do not have readily available cost information.<sup>231</sup> Without reliable cost information, it is not possible to set a more accurate X based on the actual difference between charges and costs.
- 6.41 We are therefore consulting on an X for the other LLU ancillaries basket in the range 0% (i.e., constant real charges cap) to 6% (i.e. the upper estimate for BT’s overall

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<sup>229</sup> BT’s response to question 3 of the Twelfth s.135 to BT.

<sup>230</sup> For evidence on this see BT’s 2012/13 RFS, where in 2012/13 (p. 78) LRIC is not reported, but for 2011/12 the LRIC:FAC ratio is of 94% for both MPF and SMPF Ceases. In 2011/12, the MPF and SMPF Ceases reported (p. 79) comprise both the soft and hard ceases, rather than just the hard ceases as in 2012/13 (p. 78).

<sup>231</sup> BT has confirmed that it does not produce cost information to this level of granularity in a readily available format. See 28 of May 2013 letter (by e-mail) from Openreach to David Clarkson (Ofcom) on “Fixed Access Market Reviews: Approach to setting any future LLU and WLR Charge Controls” and BT’s response to question 3 of the Eighth s.135 to BT.

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efficiency rate presented in our July 2013 Consultation). Our preferred option is to set the X in the CPI-X control equal to our assessment of BT's overall efficiency rate. As set out in the July 2013 Consultation, we consulted on a range of 4% to 6% for the efficiency rate, with a base case of 5%.

- 6.42 We propose to impose alignment of charges between MPF and SMPF ancillaries in the "other LLU ancillaries" basket<sup>232</sup> as these services, which are currently aligned in terms of charges, present a high level of similarity in terms of engineering activity and, as a result, in terms of expected costs (see, for example, Table 4.26 in the July 2013 Consultation for further details). In addition, a regulatory requirement to align charges will avoid the risk of Openreach favouring SMPF (used by BT downstream) at the expense of MPF.
- 6.43 Alternatively, we have also considered an option where both the "Hard Ceases basket" and the "Other LLU ancillaries basket" would each be divided into two independent baskets, where the value of X for each separate basket would be based on the pooled revenues and costs from both the SMPF and MPF services. In other words, there would be: (a) two separate baskets for each of "SMPF Hard Ceases" and "MPF Hard Ceases", but subject to the same controlling percentage; and (b) two separate baskets for each of "Other SMPF ancillaries" and "Other MPF ancillaries", but these two being subject to the same controlling percentage. Under this alternative 8-basket structure, given the MPF and SMPF separation, we would not propose alignment of charges (within Hard Ceases and within other LLU ancillaries).
- 6.44 While our preferred approach (6-basket structure with 7 alignments of charges) guarantees that the charges for similar products (in terms of engineering activity, and likely in terms of costs) will remain aligned over the charge control period (2014/15-2016/17), we acknowledge that under some circumstances an 8-basket structure might provide better protection against the risks of gaming. This is because under a 6-basket structure BT may, in theory, have an incentive to concentrate charge decreases on services that are consumed relatively more by BT downstream. However, in practice, we do not expect significant charge differences whether we adopt a 6-basket structure with appropriate alignment of charges across analogous services in different baskets or an 8-basket structure without any charge alignments.

### Expedite connection services

- 6.45 We propose to remove MPF, SMPF and WLR Expedites from the respective ancillary baskets and not impose a safeguard cap. Our reasoning is as follows.
- 6.45.1 First, we are in the process of increasing the incentives on Openreach to deliver a more consistent quality of service for the standard new connection service. This may incentivise Openreach to decrease the charges of providing the expedited services given that better standard services are likely to provide a tighter constraint on charges for WLR, MPF and SMPF Expedite connections. We consider that the charge control on MPF and

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<sup>232</sup> Given the similarity in terms of engineering activity, and likely in terms of costs, we propose to impose the alignment between MPF and SMPF charges for: Tie Pair Modification (3 working day lead time Re-termination); Tie Pair Modification (Multiple Re-termination); Cancellation of orders for Provide, Migration, Modification or Amend; Amend orders. Allowable change to Order; and Standard line test.

SMPF New Provides and WLR Standard Connection services is likely to be an effective constraint on the charges for the Expedite variants.<sup>233</sup>

- 6.45.2 Second, we do not have cost information regarding Expedite connection services. As mentioned in the July 2013 Consultation (paragraph 4.288), the primary cost for expediting a service is the opportunity cost with respect to the other activities the engineer may otherwise be engaged in, which is hard to observe and verify.
- 6.45.3 Third, the Expedite connection services will be subject to the usual SMP remedies, i.e. price notification, no undue discrimination, fair and reasonable access including for charges. Absent robust cost information by which we might set a charge control, it seems to us that a fair and reasonable charges condition is likely to be the most appropriate form of price regulation. Such an obligation requires BT to monitor its charges for MPF and SMPF Expedites and ensure that they remain fair and reasonable. Where BT sets new, more aligned, charges should CPs continue to be concerned with the level or relative pricing of expedited connections (currently, MPF Expedite is at £145.00 and SMPF Expedite is at £100.10) they are able to challenge BT's charges, and absent commercial agreement, raise a dispute with us.

## Revised proposals for SMPF New Provide

### Proposals in the July 2013 Consultation

- 6.46 In the July 2013 Consultation we proposed to set the charge control on SMPF New Provide at LRIC. We considered this was necessary to meet the two constraints from the LRIC differentials comparison (i.e. that the charge differentials between WLR vs MPF and between WLR+SMPF vs MPF each reflected the LRIC differentials). We proposed that the FAC-LRIC difference of SMPF New Provide should be recovered from the WLR and MPF rental charges on an equal per line basis.<sup>234</sup>

### Responses to the July 2013 Consultation

- 6.47 We received comments on the treatment of SMPF New Provide from Openreach, EE and TalkTalk. Openreach argued that we had failed to explain why it was preferable to attribute the unrecovered common costs from SMPF New Provide to rental services (rather than connection services) beyond saying that it would increase the charge for MPF New Provides. It had no strong objections to Ofcom's proposal as long as we showed that our approach created less distortion than allocating common costs to connections.<sup>235</sup>
- 6.48 TalkTalk argued that there was no justification for SMPF New Provide to be priced so far below other connections/migrations such as MPF Single Migration and WLR

<sup>233</sup> The fact that revenues for MPF and SMPF Expedite in 2008/2009, 2009/2010 and 2011/12 were immaterial (the only exception is SMPF Expedite in 2011/12 with a revenue of [×<]) suggest that the standard connection services are likely to be an effective competitive constraint. Revenues in 2010/11 are not available, given that there was no LLU charge control during that financial year. Revenues for WLR Expedite are not available given that it is a nascent product (introduced on 22 July 2013).

<sup>234</sup> See July 2013 Consultation, paragraphs 4.37-4.43.

<sup>235</sup> See Openreach's response to the July 2013 Consultation, p. 43.

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Conversion<sup>236</sup>, as they all involved roughly the same number of jumper movements.<sup>237</sup>

- 6.49 EE considered that SMPF New Provide should be priced at LRIC and that any adjustment to ensure that the difference between MPF and WLR+SMPF reflected incremental cost differences should be done immediately rather than through glide paths. EE disagreed that the SMPF New Provide service would only relate to connections as it would still need to be used when migrating from cable or in home move scenarios.<sup>238</sup>

## Our revised proposals

- 6.50 In contrast to our proposals in the July 2013 Consultation; we are now proposing to introduce a charge control on the simultaneous provision of WLR Connection services and SMPF New Provide (i.e. the WLR+SMPF Simultaneous Connections). This implies that the SMPF New Provide service is only likely to be purchased by CPs upgrading a customer from voice only (using WLR) to voice and broadband, rather than when connecting a new customer. Thus, in some circumstances (e.g. when a CP uses both WLR+SMPF and MPF in an exchange or if the end customer is considering switching to another LLU CP), there will be a choice between using SMPF New Provide or MPF Single Migration. We therefore no longer believe that it will be appropriate to control SMPF New Provides at its individual LRIC because this will result in a charge of £27.63 in 2016/17, well below the aligned charge for migration services (which includes MPF Single Migration) of £33.23. We agree with TalkTalk that we should avoid setting charge controls for services with similar underlying costs at markedly different levels, unless necessary.
- 6.51 Therefore, one option would be to align SMPF New Provides with migration services involving jumpering based on the same weighted average LRIC. Adding the LRIC of SMPF New Provides to the weighted average LRIC for migration services involving jumpering would move the cap to £30.73 in 2016/17.
- 6.52 An alternative option is to regulate SMPF New Provides at FAC. For example, when a customer upgrades from voice only to voice and broadband from their existing WLR supplier, the most likely wholesale service would be SMPF New Provide. In this case, the SMPF New Provide might be seen as more of a connection service where our approach has been to set charges at FAC. Another advantage in setting the charge at FAC is that it avoids the need to reallocate common costs from SMPF New Provides to other services, such as rentals. In any case, the difference between the FAC of SMPF New Provides and the weighted average LRIC for jumpering services (when SMPF New Provides is included) is relatively small at around £1.
- 6.53 For this consultation we have favoured the simpler approach and so propose to set the control on SMPF New Provide at FAC. This would result in a charge for SMPF New Provides of £29.71 in 2016/17. Since our revised approach implies that the common costs from SMPF New Provides would no longer need to be recovered from WLR and MPF rental charges, we believe that our revised approach would also address Openreach's concerns.

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<sup>236</sup> The SMPF New Provide involves 3 jumper movements, the MPF Single Migration involves [REDACTED] [3.5-4] jumper movements and the WLR Conversion involves 3 jumper movements.

<sup>237</sup> See TalkTalk's response to the July 2013 Consultation, p. 45.

<sup>238</sup> See EE's response to the July 2013 Consultation, pp. 16-17.

## Revised proposals for the services in the Co-Mingling basket

### July 2013 Consultation

6.54 In the July 2013 Consultation we proposed a basket for Co-Mingling services. These are services used by purchasers of both MPF and SMPF services, including services required to locate equipment at Openreach's local exchanges. The proposed Co-Mingling basket comprised services of Tie Cables, MPF Room Build and MPF Hostel Rentals. We proposed to set the X for the Co-Mingling basket based on the costs and revenues of MPF Room Build, MPF Hostel Rentals and Tie Cables as per BT's 2011/12 RFS.

### Responses to the July 2013 Consultation

#### Tie Cables basket

- 6.55 TalkTalk considered that our approach to the Co-Mingling basket was flawed. TalkTalk said that the Co-Mingling basket comprises services which are used exclusively externally (MPF Hostel Rentals and MPF Room Build) with services which are used mostly internally (Tie Cables).<sup>239</sup>
- 6.56 TalkTalk suggested a basket design such that baskets were much more homogeneous (in terms of the mix of external versus internal use and potential degree of competitive pressure). Otherwise, it suggested that the sub-cap must be significantly lower, e.g., CPI-X+2%, rather than CPI-X+5% (as proposed in the July 2013 Consultation).<sup>240</sup>
- 6.57 Sky<sup>241</sup> said that "*Tie Cables should be removed from the Co-Mingling basket and controlled separately*" for three reasons. First, the revenues from Tie Cables are sufficiently material to warrant being treated separately. Second, the Co-Mingling basket would no longer be dominated by Tie Cables such that the basket control would have more influence over the charge changes for the other services in the basket. Third, as BT does not consume the other basket services itself, there would no longer be any risk that BT would focus charge changes or cost reductions only on Tie Cables – which it purchases.

#### New and to be withdrawn services in the Co-Mingling New Provides and Rentals basket

6.58 Openreach<sup>242</sup> noted that there were services listed within the legal instrument that will not be available for sale when the new control starts as their withdrawal has already been notified (effective from 1 September 2013):

- Ancillary Service Structure Fixed price to service 1-3 Rack Space Units;

<sup>239</sup> See TalkTalk's response (29 October 2013), paragraph 6.14, p. 47, [http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/TalkTalk\\_Group.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/TalkTalk_Group.pdf).

<sup>240</sup> See TalkTalk's response (29 October 2013), paragraphs 6.11 and 6.29.

<sup>241</sup> See Sky's response, paragraphs 7.5 and 7.11, <http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Sky.pdf>.

<sup>242</sup> See Openreach's response (30 September 2013), paragraph 283, <http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Openreach.pdf>.

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- Ancillary Service Structure Fixed price to service 4-6 Rack Space Units;
- Upgrade of existing MCU1 product to MCU2;
- Upgrade of existing BBUSS3 Point Of Presence to BBUSS7 (power and space);
- Upgrade of existing BBUSS 3 Point Of Presence to B-BUSS 7 (space only);
- Downgrade of existing BBUSS 7 Point Of Presence to B-BUSS 3 (space only);
- MCU Max upgrade to existing MCU1 / MCU2;
- MCU Max Upgrade from MCU1 / MCU2 Out of Hours Connection Fee;
- MCU Max Aux upgrade to existing MCU1 / MCU2; and
- MCU Max Aux Upgrade from MCU1 / MCU2 Out of Hours Connection Fee.

6.59 Also, Openreach<sup>243</sup> said that “*the FCP products [Flexible Comingling Product] (under “Accommodation” in the Openreach price list) launched in May 2012 have not been included in the definition of the Co-Mingling basket in the legal instrument*” and that we should confirm our intentions for the following items to be charge controlled:

- FCP (Powerbase) AC only base unit 600mm (w) x 600mm (d) to include lighting and cable management;
- FCP (Powerbase) AC only base unit 800mm (w) x 600mm (d) to include lighting and cable management;
- FCP (Powerbase) AC only base unit 600mm (w) x 800mm (d) to include lighting and cable management;
- FCP (Powerbase) AC only base unit 800mm (w) x 800mm (d) to include lighting and cable management;
- HDF sub rack (per sub rack 3x 100 pair capacity);
- HDF cabinet 800mm (w) x 600mm (d) for FCP;
- HDF cabinet 800mm (w) x 800mm (d) for FCP;
- Rack Space Unit (RSU) for FCP to include lighting and cable management;
- MCB customisation at initial build for FCP; and
- Cabinet doors per pair for FCP only (where provided as an upgrade will be subject to a Site Visit charge).

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<sup>243</sup> See Openreach’s response (30 September 2013), paragraphs 283, <http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Openreach.pdf>.

## Our revised proposals

- 6.60 We now propose to divide what was the Co-Mingling basket into two, by taking the Tie Cables services out of the Co-Mingling basket and placing them in a separate basket subject to a charge control. We propose to rename the remaining basket as the “Co-Mingling New Provides and Rentals” basket.
- 6.61 We consider this approach preferable to the one proposed in the July 2013 Consultation for the following reasons.
- 6.61.1 First, in light of BT’s 2012/13 Compliance Statement and BT’s 2012/13 RFS, which we did not have available for the July 2013 Consultation, we can now see that the RFS service Tie Cables<sup>244</sup> shows an average charge above FAC whereas the RFS services MPF Hostel Rentals and MPF Room Build show average charges below FAC.<sup>245</sup> This suggests that there would be a benefit in having different basket controls to deal with the different charge misalignments between Tie Cables and MPF Hostel Rentals and MPF Room Build.
- 6.61.2 Second, the approach now proposed separates services that are bought both internally and externally (Tie Cables) from those that are only bought externally (for example, MPF Hostel Rentals and MPF Room Build) as argued for by Sky and TalkTalk. We consider this is an advantage as it reduces the scope for gaming by Openreach (i.e. the risk of concentrating the charge decreases on services that are essentially for internal consumption, as a means for BT to gain a competitive advantage at the retail level).
- 6.61.3 Third, a basket control for Tie Cables aligns more closely with the respective cost information available (in BT’s RFS).
- 6.61.4 Fourth, as explained earlier, the revenues from Tie Cables (£28 million in 2011/12, according to BT’s RFS 2011/12, p. 55) are sufficiently material to warrant those services being treated separately and subject to their own charge control.
- 6.62 In light of the response from Openreach, we also propose to remove from the Co-Mingling New Provides and Rentals basket the services that were withdrawn in September 2013, and to include the FCP products launched in May 2012, as listed in paragraph 6.59 above.<sup>246</sup>

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<sup>244</sup> In BT’s 2011/12 RFS (see p. 55) the average price of Tie Cables is above DSAC. Openreach reduced various Tie Cable prices in 2012/2013 to try to bring prices into line with DSAC, however, they are still likely to remain above FAC.

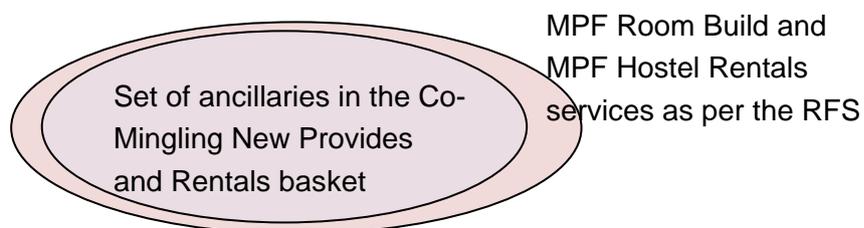
<sup>245</sup> MPF Room Build and MPF Hostel Rentals (as per BT’s 2011/12 RFS) correspond, respectively, to the services Co-Mingling New Provides and Co-Mingling Rentals in BT’s 2012/13 RFS. As per BT’s 2012/13 RFS, the average charge–FAC misalignment for Tie Cables is £67.18-£44.05, for Co-Mingling New Provides is £9,714.74-£16,157.35 and for Co-Mingling Rentals is £4,670.22-£7,756.23.

<sup>246</sup> Currently, we do not have the revenues, on a service by service basis regarding the new FCP products (see Eleventh s.135 to BT, Template 6). Thus, for the purpose of calculation of X for Co-Mingling New Provides and Rentals basket we assumed that the services that have been replaced by the FCP products would still be available in the market at their latest available price (i.e., the price in force on the day these services were withdrawn).

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- 6.63 We propose to calculate the value of X for the Tie Cables basket based on the Tie Cables RFS service.<sup>247</sup> In particular, the value of X is based on the average charge (across services) for “Tie Cables” as per BT’s 2012/13 RFS service and its FAC forecast for 2016/17.
- 6.64 We propose to calculate the X for the Co-Mingling New Provides and Rentals basket based on the costs and revenues for the RFS services of MPF Room Build and MPF Hostel Rentals. However, there is not a perfect mapping between these RFS services and the individual services in the basket (see Figure 6.2 below). While all the revenue related to MPF Room Build is included in our basket control, a significant fraction of the revenue regarding MPF Hostel Rentals is not included in our basket control.<sup>248</sup> Given this, we propose to make an adjustment to the revenue and forecast costs for MPF Hostel Rentals for 2016/17 to take into account that only a fraction of the RFS reported revenue is actually controlled in the Co-Mingling New Provides and Rentals basket.

**Figure 6.2: X for Co-Mingling New Provides and Rentals basket based on the costs and revenues of MPF Room Build and MPF Hostel Rentals**



- 6.65 The importance of this adjustment is that different services (i.e. MPF Hostel Rentals and MPF Room Build) may have different charge vs cost misalignments, thus, different weights on the different services will (in general) generate different values for X. Our proposed adjustment will reduce the weight that the MPF Hostel Rentals misalignment has on the X for the Co-Mingling New Provides and Rentals basket.
- 6.66 We do not propose any adjustment to the revenue or costs for MPF Room Build in 2016/17 as revenue from this service is fully included in the basket.

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<sup>247</sup> Recently we have become aware of an error in the allocation of evoTAM costs which is related only to tie cables bought internally (as only BT Wholesale purchases the tie cables affected). We think that this error will not impact significantly the value of X we set for the proposed Tie Cables basket because the Tie Cables RFS service (which we use to derive the value of X for the proposed Tie Cables basket) relates only to external tie cables. However, we have not yet investigated fully this issue. We will address it for the final Statement.

<sup>248</sup> One important difference is that the electricity revenues are included in the MPF Hostel Rentals RFS category, but are not included in the proposed Co-Mingling New Provides and Rentals basket control. In the July 2013 FAMR Consultation we propose 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. See paragraphs 12.92-12.94 in the July 2013 FAMR Consultation.

## Revised proposals for WLR Connections

### Proposals in the July 2013 Consultation

- 6.67 In the July 2013 Consultation we proposed to set a charge control on the WLR New Connection service such that the difference between MPF New Provide, WLR New Connection and MPF New Provide and WLR+SMPF connections charges was brought into line with the difference in LRICs in 2016/17.

### Responses to the July 2013 Consultation

- 6.68 We did not receive comments on our approach to the regulation of WLR New Connections.

### Our revised proposals

- 6.69 As discussed above we are proposing to create an MPF New Provides basket encompassing three different MPF connection services (MPF New Connection, MPF WLTO and MPF SLP). In the case of WLR connections, in the July 2013 Consultation we proposed to charge control the WLR Standard Connection (which we called WLR New Connection) on its own.
- 6.70 In line with our approach for MPF New Provides, we are now proposing to control an additional WLR connection service within a basket consisting of: WLR Standard Connection<sup>249</sup> and WLR Start of Stopped MPF Line.<sup>250</sup>
- 6.71 These services are the only two WLR connection services offered by Openreach that require engineering work at the exchange.<sup>251</sup> The service WLR Start of Stopped MPF Line was introduced by Openreach in November 2012 and has not to date been subject to a charge control.<sup>252</sup> Although the current volumes of WLR Start of Stopped MPF Line are likely to be minimal<sup>253</sup> we expect them to increase over the course of the charge control period, in part due to the increase in MPF lines. We therefore consider that it is important to ensure that this service is also subject to a charge control in some form.
- 6.72 In addition, as discussed from paragraph 6.101 below, we are now proposing to widen our approach to simultaneously provided WLR and SMPF services to also include connection services. The services affected by these proposals are SMPF

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<sup>249</sup> This service refers to "Supply of new Basic line - Per line" in Openreach's price list ([here](#)).

<sup>250</sup> This service refers to "Supply of new line - Per line – using previously stopped LLU MPF line" in Openreach's price list ([here](#)).

<sup>251</sup> The WLR Start of Stopped WLR line and WLR Working Line Take-Over differ from their equivalent MPF services in that they do not require any engineering activity at the exchange. They only require a systems update to reflect the transfer of the line between CPs. Therefore, in terms of their underlying activities, these services are more closely aligned with Openreach's WLR Transfer service and, in practice, Openreach has historically set the charge for these services equal to the WLR Transfer charge.

<sup>252</sup> See Openreach price list ([here](#)).

<sup>253</sup> We do not have volume information on this service, however, the average FAC of WLR New Connections in 2012/13 (which includes costs from WLR Start of Stopped MPF Line) was exactly equal to the FAC of WLR New Connection standard. This implies that the volumes of WLR Start of Stopped MPF Line have to be minimal (as WLR Start of Stopped MPF Line had no impact on the average FAC shown in the RFS).

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New Provide when provided simultaneously alongside either of the two following WLR connection services:

- WLR Standard Connection; and
- WLR Start of Stopped MPF Line.

6.73 We consider that a charge control is therefore necessary for these services in order to appropriately control the charge for the simultaneous provision of either of these two WLR connection services when provided simultaneously alongside SMPF New Provide. We believe another advantage of this new proposed basket is that it will allow Openreach some flexibility in setting the relative charges of WLR Standard Connection and WLR Start of Stopped MPF Line (compared to a separate control on each service).

6.74 Openreach has confirmed to us that the RFS costs for WLR Connections already include costs from WLR Start of Stopped MPF Line. Thus we propose to use this to set the charge control on the WLR Connections basket.<sup>254</sup>

## Other basket control proposals

### Sub-caps at CPI-X+7.5%

#### July 2013 Consultation

6.75 In the July 2013 Consultation, we proposed to apply a sub-cap on each charge which would be less restrictive than the overall basket control.<sup>255</sup> Given that the sub-caps were designed to apply to every service in the basket, a sub-cap as tight or tighter than the basket cap would defeat the object of pricing flexibility within the basket (and compromise forecast cost recovery given the basket controls were calculated, as far as possible, on costs).

6.76 Setting the appropriate sub-cap on individual charges within the basket requires the exercise of regulatory judgment to balance the benefits of allowing some flexibility to change charges against the risk of gaming. We proposed sub-caps rather than inertia clauses.<sup>256</sup> First, we thought there was a greater risk of Openreach pricing too high rather than too low in these markets. Second, in any case, a sub-cap on each charge is likely to prevent very rapid reductions in other charges in the basket if Openreach is to charge up to the cap across the basket as a whole.

6.77 We thought that there was a case for considering that the maximum increase under the cap would be the controlling percentage for the basket (CPI-X) plus 5%, rather than 7.5% as is currently the upper limit under the existing inertia clauses within the basket controls.

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<sup>254</sup> Response to question 11 in Eleventh s.135 to BT (information provided by BT on 18 October 2013)

<sup>255</sup> See July 2013 Consultation, paragraphs 4.251-4.254.

<sup>256</sup> An inertia clause limits the maximum annual increase or decrease of a charge. In the March 2012 Statement we imposed that the percentage change in discrete charges for each and every service within the MPF, SMPF and Co-Mingling baskets should be no more (less) than the basket control increased (reduced) by 7.5%. See March 2012 Statement Annexes (page 180, condition FAA4(A).6), available at <http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/statement/annexesMarch12.pdf>.

## Responses to the July 2013 Consultation

- 6.78 Openreach disagreed that the sub-cap constraint was needed to prevent gaming. Openreach said that *“while there is limited data on items such as bulk migration, the inaccuracy of the forecast would not allow gaming, and neither would the fact that some of the more material items aren’t forecast at all”*.
- 6.79 Openreach concluded that sub-caps on the baskets should be limited to CPI-X+10%, as there is no failure to regulate, it would allow the efficient pricing of services, and it would permit charge increases.<sup>257</sup>
- 6.80 TalkTalk suggested three options that Ofcom could employ to prevent Openreach from pricing excessively. First, understand the current costs of individual services and then set one or more sub-caps that would ensure that individual service charges could not become excessive. Second, require that the outturn mark-ups on services were the same (or less) for external sales than for internal sales. Third, design the baskets so that they were much more homogeneous and impose a sub-cap much nearer to the overall basket cap.<sup>258</sup>
- 6.81 TalkTalk said that *“if Ofcom does not adopt any of these approaches then the sub-cap must be significantly lower e.g.  $CPI - X + 2\%$ .”*<sup>259</sup>
- 6.82 Another stakeholder [REDACTED] welcomed sub-caps on services to prevent the ability to game a basket and create distortions in the market. However, it said that it had no view as to whether or not the pricing freedom this afforded fulfilled the anti-gaming goal.<sup>260</sup>
- 6.83 Virgin Media agreed with our proposal of moving from an inertia clause to a sub-cap, but said that we should ensure that this is tested for the baskets concerned.<sup>261</sup>

## Our revised proposals

- 6.84 Our revised basket proposals set out above mean that the services in each basket are more homogeneous in terms of competitive conditions, in particular, services consumed primarily by BT downstream are either no longer proposed to be in baskets of services consumed primarily by other CPs (e.g. proposed separation of Tie Cables from MPF Room Build and MPF Hostel Rental services) or, if MPF and SMPF services are proposed to be in the same basket (Hard Ceases basket and other LLU ancillaries basket), we will impose alignment of charges between MPF and SMPF comparable services. Also, we have sought to create baskets of services which are more homogenous in their characteristics and likely costs (e.g. separating MPF Stopped Line Provide and MPF Working Line Takeover from MPF Hard Ceases). Because of this, we consider that there is less scope for Openreach to game the basket structure compared to our July 2013 proposals.

<sup>257</sup> See Openreach’s response (30 September 2013), paragraphs 300-301, p. 54-55, and paragraph 318, p. 56.

<sup>258</sup> See TalkTalk’s response (October 2013), paragraphs 6.25-6.28, p. 50.

<sup>259</sup> See TalkTalk’s response (October 2013), paragraphs 6.29, p. 50.

<sup>260</sup> [REDACTED]

<sup>261</sup> See Virgin’s response to Question 4.12, p. 12,

[http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Virgin\\_Media.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Virgin_Media.pdf).

6.85 Note that given the homogeneity of the baskets and the alignment of charges proposed, there is less scope to use flexibility to game the basket (as compared to the July 2013 Consultation). Given the revised proposals for basket structure summarised above, we now propose to use 7.5%: the top end of the 5% to 7.5% range on which we are consulting. This is the same upper limit as exists with the current inertia clauses. This would mean that the maximum increase under the cap would be the controlling percentage for the basket (CPI-X) plus 7.5%. Although we currently have a preference to use the top end of the range consulted on in the July 2013 Consultation (i.e., 7.5%), we are still currently consulting on the 5% to 7.5% range.

## **Starting charges for basket controlled services**

### July 2013 Consultation

#### *Starting charges for the Co-Mingling basket*

- 6.86 In the July 2013 Consultation we proposed to set the value of X for the Co-Mingling ancillaries basket based on the pooled costs and pooled revenues of the following RFS services: MPF Room Build, MPF Hostel Rentals and Tie Cables.
- 6.87 In order to calculate the 2013/14 average charge (across individual services) for the Co-Mingling basket, we used the average charges reported in BT's 2011/12 RFS and then projected this forward assuming that the current control for the Co-Mingling basket, RPI-3.6% (as set out in the March 2012 Statement), would bind.

#### *Starting charges and weighted average charge*

- 6.88 We proposed the draft legal instrument at Annex 17 of the July 2013 Consultation. This required compliance to be demonstrated based on the movement in the weighted charge for each service. This means that to check compliance for the first year of the charge control (i.e., 2014/15) we would use the weighted charges in the prior year (i.e. 2013/14), rather than the latest available charges in 2013/14.

### Responses to the July 2013 Consultation

#### *Starting charges for the Co-Mingling basket*

- 6.89 Openreach<sup>262</sup> pointed out that the starting charges for calculating the value of X for the Co-Mingling basket were incorrect, i.e., we had not used the latest charges. The latest charges were lower than we assumed, meaning that the resulting X was tighter than we intended, i.e., the X for the Co-Mingling ancillaries basket was overstated.
- 6.90 Openreach<sup>263</sup> explained that while the basket control allowed a 1.8% increase in charge in 2012/13, significant reductions were made later in the year to Tie Cables [§<]. Offsetting increases could not be made due to the inertia clause. Therefore, the current control for the Co-Mingling basket was not a binding constraint on current charges, in contrast to what we had assumed in the July 2013 Consultation.

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<sup>262</sup> See Openreach's response (30 September 2013), paragraph 112, p. 26,.

<sup>263</sup> See Openreach's presentation on "Co-Mingling basket" (October 2013).

- 6.91 Openreach<sup>264</sup> suggested a simple approach to correcting Co-Mingling charges consisting of: (i) updating charges based on the actual change in the 2012/13 RFS category for Tie Cables, and (ii) estimating 2013/14 RFS charges based on an average increase based on the maximum amount that Openreach can carry forward under the current controls in 2012/13.

### *Starting charges and weighted average charge*

- 6.92 Openreach considered that our draft legal instrument at Annex 17 of the July 2013 Consultation gives rise to unintended complications.<sup>265</sup>
- 6.93 It said that using a weighted average charge for 2013/14 means that some starting charges across comparable SMPF and MPF services (in the MPF and SMPF ancillaries baskets) no longer align. This was the result of some temporary misalignment of charges during part of 2012/13; this was necessary in order to comply with the current WLR and LLU charge control and was rectified by the end of the year.<sup>266</sup>
- 6.94 To deal with our concern about “gaming” the charge controls in the form of charge increases in the final month of the year to reduce the level of reduction required, Openreach suggested that we could specify the starting charges for basket services (i.e. charges announced to be in effect on 31 March 2014) in the legal instrument.<sup>267</sup>

### Our revised proposals

#### *Starting charges for the Co-Mingling basket*

- 6.95 We agree that we have miscalculated the value of X for the Co-Mingling basket because our assumption that the charges were at the limit of what was allowed under the Co-Mingling charge control in 2012/13 was not correct.<sup>268</sup>
- 6.96 We describe below how we have ensured our calculations of the values of X for Tie Cables and Co-Mingling New Provides and Rentals baskets are consistent with the starting charges, which we propose to include in the legal conditions.
- 6.97 For the Tie Cables basket, we compute the average charge (across services) for “Tie Cables” as per BT’s 2012/13 RFS service, based on the latest available charges for the individual services that comprise the “Tie Cables” RFS service, weighted by 2011/12 volumes.<sup>269</sup>
- 6.98 For the “Co-Mingling Rentals” and “Co-Mingling New Provides” RFS services, first, we take the average charge (across services within each RFS service) for

<sup>264</sup> See Openreach’s presentation on “Co-Mingling basket” (October 2013).

<sup>265</sup> See Openreach’s response (30 September 2013), paragraph 285, p. 52.

<sup>266</sup> See Openreach’s response (30 September 2013), paragraph 286, p. 52.

<sup>267</sup> See Openreach’s response (30 September 2013), paragraph 289, p. 53.

<sup>268</sup> In the July 2013 Consultation we assumed that the basket control for the Co-Mingling basket would be binding. However, according to the 2012/2013 Compliance Statement, in 2012/13 the aggregate price change for the Co-Mingling basket was [X] (negative), while the basket control for that same year was 1.8%.

<sup>269</sup> The 2011/12 volumes on a service by service basis (for charge controlled services) can be estimated from the information reported in the 2012/13 Compliance Statement.

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“Co-Mingling Rentals” and “Co-Mingling New Provides” in 2012/13 from BT’s 2012/13 RFS (p. 78). Second, we forecast the average charge (across services within each RFS service) for “Co-Mingling Rentals” and “Co-Mingling New Provides” in 2013/14 by multiplying the average charge (across services) in 2012/13 (as per BT’s 2012/13 RFS) by the respective charge percentage change from 2012/13 to 2013/14 (calculated from Openreach’s price list).<sup>270</sup>

### *Starting charges and weighted average charge*

- 6.99 We agree with Openreach that it would be unfortunate if the charges for MPF and SMPF services that have the same costs were forced apart because of the way the starting charges were specified in the legal conditions. We propose now to specify in the legal conditions the starting charges for all basket services based on the latest charges announced on 20 November 2013. This way we ensure that charges can be aligned between SMPF and MPF comparable services.
- 6.100 We have computed the value of X for each basket based on the latest available charges announced on Openreach’s price list (as at November 2013). Therefore, we guarantee consistency between the values of X and the respective starting charges for all baskets proposed.

**Question 6.1:** *Do you agree with our revised proposals for baskets and SMPF New Provides? Please provide reasoning for your answer.*

## **Discounts for simultaneously commissioned and fulfilled services**

### **Introduction**

- 6.101 In this subsection we set out our proposals in relation to the treatment of simultaneously provided services. In particular, we set out our proposals in respect of the simultaneous supply of:
- WLR Connections<sup>271</sup> and SMPF New Provide<sup>272</sup>;
  - WLR Transfer<sup>273</sup> and SMPF Single Migration<sup>274</sup>;
  - WLR Start of Stopped WLR Line<sup>275</sup> and SMPF New Provide; and

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<sup>270</sup> Individual charges are weighted by the respective revenue weight in 2011/12 (provided in the 2012/13 Compliance Statement).

<sup>271</sup> This is a basket of two connection services. In particular, “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” in BT’s price list ([here](#)).

<sup>272</sup> Service “SMPF Connection charge, Basic Provide on existing narrowband, Simultaneous Provide of SMPF with narrowband, Singleton Migration (Transfer or change of CP migrations) from Narrowband, MPF, SMPF and ISDN/ Highway” in BT’s price list ([here](#)).

<sup>273</sup> Service “Line Transfer (inc Working Line Takeover and Starting of Stopped lines) Basic line - Per transfer” in BT’s price list ([here](#))

<sup>274</sup> Service “SMPF Connection charge, Basic Provide on existing narrowband, Simultaneous Provide of SMPF with narrowband, Singleton Migration (Transfer or change of CP migrations) from Narrowband, MPF, SMPF and ISDN/ Highway” in BT’s price list ([here](#))

- WLR Working Line Take Over<sup>276</sup> and SMPF New Provide.

## Summary of our revised proposals

6.102 In the July 2013 Consultation<sup>277</sup> we set out our proposals to require Openreach to provide a discount on the charges for WLR Conversion and SMPF New Provide when CPs requested these services to be provided simultaneously. Having considered stakeholder responses to our proposed approach on simultaneously provided services in the July 2013 Consultation, and in light of further analysis, we are proposing to:

- extend this approach to the simultaneous provision of WLR Connections and SMPF New Provide; and
- in the case of the other simultaneously provided services (described in paragraph 6.101 above), continue to rely on the charge controls we have set on these services when supplied separately.

6.103 In addition, we are also proposing to re-allocate costs across services involving jumpering work at the exchange to address some concerns raised by Openreach (which we describe in detail below) relating to under-recovery of their costs of providing these services, which arise out of our proposals in relation to simultaneously provided services.

## Proposals in the July 2013 Consultation

6.104 In the July 2013 Consultation we proposed to require a discount on the charge of WLR Conversion when it is simultaneously provided with an SMPF New Provide. This was to reflect the cost savings that could be achieved from the simultaneous provision of these two services, compared to sequential provisioning. Our proposal was designed to produce more efficient charges since such charge controls would better reflect the underlying resource costs associated with the simultaneous supply.<sup>278</sup>

## Stakeholder responses to July 2013 Consultation

6.105 Most stakeholders agreed that it was appropriate to set a charge control on the simultaneous provision of WLR Conversion and SMPF New Provide. EE considered it was necessary to set a charge control to ensure appropriate pricing behaviour by BT as well as fair competition between MPF and WLR+SMPF. It also believed that a charge control would provide stronger ongoing cost efficiency incentives to BT than a cost orientation obligation.<sup>279</sup> EE also agreed with our proposal to maintain

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<sup>275</sup> Service "Line Transfer (inc Working Line Takeover and Starting of Stopped lines) Basic line - Per transfer" in BT's price list ([here](#))

<sup>276</sup> Service "Line Transfer (inc Working Line Takeover and Starting of Stopped lines) Basic line - Per transfer" in BT's price list ([here](#))

<sup>277</sup> See Section 4 of the July 2013 Consultation.

<sup>278</sup> See Section 4 of the July 2013 Consultation

<sup>279</sup> EE response to the July 2013 Consultation, p. 22

Openreach's practice during the Special Offer<sup>280</sup> to apply the price discount for WLR+SMPF Simultaneous Migration to the WLR Conversion charge.<sup>281</sup>

- 6.106 EE noted that there were additional instances in which CPs could request a WLR and SMPF service to be provided simultaneously. It argued that *"BT was able to make use of 'parallel provide' processes in some circumstances to achieve a somewhat simultaneous delivery of WLR and SMPF products, which could result in some cost savings for BT."* EE considered that our approach in the July 2013 Consultation was insufficient, as it only required BT to reflect the cost savings associated with simultaneous supply in one of the scenarios described by EE (notably, the migration from MPF to WLR+SMPF – i.e. the WLR+SMPF Simultaneous Migration).<sup>282</sup>
- 6.107 Openreach did not object to setting a charge control on WLR Conversion and its simultaneous provision with SMPF New Provide. However, it preferred to delay the introduction of a one-off price adjustment (to bring its price into line with other migration services) to 1 April 2015 to ensure that the systems needed to automate its billing processes were in place.<sup>283</sup> Openreach was also concerned about the way we had derived the charge controls on services requiring jumpering work at the exchange. It considered that our approach would result in under-recovery of the costs associated with these services. We describe its arguments in more detail below.
- 6.108 Virgin Media supported Ofcom's approach to WLR+SMPF Simultaneous Migration, noting that it agreed with the objective of ensuring that *"the competitive conditions between MPF and WLR+SMPF remained neutral"*. It agreed that a charge control was the most effective and proportionate way of fulfilling the objective.<sup>284</sup>
- 6.109 [§<] agreed that we should charge control these services, as the market was reliant on these products to promote competition and switching and a cost orientation obligation was unlikely to be sufficient.<sup>285</sup>
- 6.110 Verizon agreed that maintaining the status quo would not be appropriate.<sup>286</sup> However, it considered that Ofcom's proposal did not go far enough, and proposed that we should combine the charge control with a cost orientation obligation.

### Ofcom's revised analysis

- 6.111 We consider that any services that combine WLR and SMPF can potentially give rise to cost savings if provided simultaneously. Following on from stakeholder comments, we have therefore analysed all the services that a CP may require to migrate or connect a customer to WLR and SMPF (from any prior state of the line). In Figure 6.3 below we present the six possible services that may be required by CPs to connect/migrate to WLR and SMPF depending on the initial state of the line.

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<sup>280</sup> The Special Offer was introduced by Openreach in October 2012. It consisted of a price discount on WLR Conversion when purchased simultaneously with SMPF New Provide. For more details see paragraphs 4.53-4.54 of the July 2013 Consultation.

<sup>281</sup> EE response to the July 2013 Consultation, p. 23.

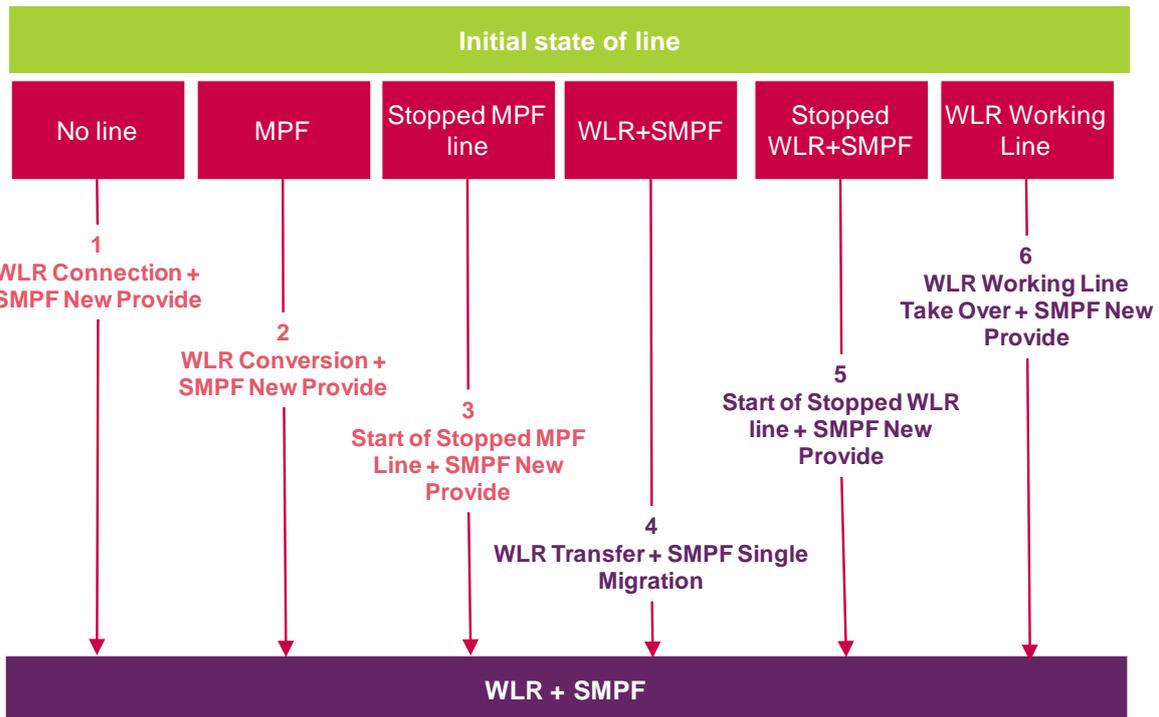
<sup>282</sup> EE response to the July 2013 Consultation, pp. 18-19.

<sup>283</sup> Openreach response to the July 2013 Consultation, p. 45.

<sup>284</sup> Virgin Media response to the July 2013 Consultation, p. 10.

<sup>285</sup> [§<]

<sup>286</sup> Verizon response to the July 2013 Consultation, para. 33-34.

**Figure 6.3: Services required to migrate or connect a customer to WLR+SMPF**

### Scenarios 1, 2 and 3

6.112 All of scenarios 1, 2 and 3 (depicted in pink) involve synergies in the exchanges when the two relevant services are simultaneously provided. For example, when the two services are provided simultaneously the amount of jumpering is reduced (compared to the two services being provided separately). We now propose to reflect these savings in the charge controls that would cover each of the services involved in scenarios 1, 2 and 3 (as discussed above).

6.113 In the case of scenario 2, we addressed this in the July 2013 Consultation where we proposed to require Openreach to discount the price of WLR Conversion when provided simultaneously with SMPF New Provide (in this consultation we refer to this as the “WLR+SMPF Simultaneous Migration”<sup>287</sup>). In its response to the July 2013 Consultation, EE said that it expected that BT would similarly be able to benefit from cost savings associated with simultaneous supply in the case of scenarios 1 and 3, i.e., when simultaneously supplying:

- WLR Standard Connection and SMPF New Provide; and
- WLR Start of Stopped MPF Line and SMPF New Provide.

<sup>287</sup> In the July 2013 Consultation we called the simultaneous provision of WLR Conversion and SMPF New Provide the “WLR+SMPF Simultaneous Provide”. In this consultation we are also considering the treatment of the simultaneous provision of WLR Connections and SMPF New Provide. In order to clearly differentiate between the two types of simultaneously provided services, in this consultation we will refer to the simultaneous provision of WLR Conversion and SMPF New Provide as “WLR+SMPF Simultaneous Migration” and to the simultaneous provision of WLR Connections and SMPF New Provide as “WLR+SMPF Simultaneous Connections”.

- 6.114 In the first scenario, EE noted that only 2 jumper movements were required when provided simultaneously (compared to 4 jumper movements if purchased sequentially). In addition, EE noted that when the services are not provided simultaneously the end user would have to wait an additional 5 working days for their broadband service (this is the minimum lead time for provision of SMPF). In the case of the second scenario above, only 4 jumper movements would be required when provided simultaneously (6 when purchased sequentially), and again when not provided simultaneously the end user would need to wait an additional 5 days for their broadband service.<sup>288</sup>
- 6.115 We have investigated further the possibility of BT achieving cost savings in the simultaneous provision of WLR+SMPF in the two scenarios described above, including by way of seeking information using our statutory information gathering powers. BT has confirmed that there are cost savings associated with the simultaneous provision of these services.<sup>289</sup> In particular, in these two scenarios the WLR and the SMPF service both involve exchange-related work, and the amount of work is reduced when the WLR and the SMPF services are provided simultaneously, as we described in the case of WLR+SMPF Simultaneous Migration in the July 2013 Consultation. We therefore, consider that it is appropriate to impose some form of pricing constraint on these services in order to reflect the cost savings associated with the simultaneous provision.
- 6.116 We consider that a charge control would be the most appropriate form of remedy as it would:
- provide stronger incentives for cost efficiency than a cost orientation obligation; and
  - offer less flexibility to Openreach than a cost orientation obligation and thus be more likely to result in prices that more closely reflect incremental cost differences.
- 6.117 We have noted earlier in this Section that we are proposing to set a control on a WLR Connections basket encompassing both the WLR Standard Connection service and the WLR Start of Stopped MPF Line at FAC. We are therefore proposing that the simultaneous provision of WLR Connections and SMPF New Provides should be controlled at FAC. In line with our policy preference discussed in Section 8, we propose to bring current charges to the underlying FAC by the end of the charge control period using a glide path (rather than a one-off adjustment).
- 6.118 We propose that we should adopt the same approach to the implementation of a charge control for simultaneously provided connection services as we proposed for the simultaneous migration from MPF to WLR+SMPF, namely, by imposing a discount on the WLR service (i.e. WLR Standard Connection or WLR Start of Stopped MPF Line). Our proposal is to derive an aggregate FAC cost for the WLR+SMPF Simultaneous Connections by the end of the charge control period and to impose annual discounts on the WLR Connection services such that by the end of the control aggregate charges for WLR+SMPF Simultaneous Connections reflect underlying FAC costs.

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<sup>288</sup> EE response to the July 2013 Consultation, pp. 19-20.

<sup>289</sup> Openreach response to Question 12 of 12th s.135 request to BT dated 11 October 2013.

- 6.119 In order to address Openreach's concerns that it would not be able to develop its automated billing capability until 1 April 2015 we propose to model the underlying costs of the WLR+SMPF Simultaneous Connections and Migrations using the higher costs of Openreach's manual billing during the first year of the control and the lower automated billing costs thereafter (i.e. after April 2015 when Openreach expects to have introduced the automated billing system). This will ensure that our charge controls reflect the underlying costs of supply at each point in time.
- 6.120 We present the expected charges following from our proposals for WLR+SMPF Simultaneous Connections in Table 6.3 below. We explain our approach to determining the underlying costs of simultaneously provided services in detail in Annex 11.

**Table 6.3: Implementation of the charge control on WLR Standard Connection or WLR Start of Stopped MPF Line when provided simultaneously with SMPF New Provide**

Product Name		Charge controls (£, nominal prices)		
		2014/15	2015/16	2016/17
a	WLR Connections	44.82	42.60	40.50
b	Sum of charge controls for WLR Connections and SMPF New Provide	75.17	72.63	70.21
c	WLR+SMPF Simultaneous Connections control	62.93	50.88	41.14
d	Discount needed on WLR Connections charges (b-c)	12.24	21.75	29.07

Source: Ofcom

**Question 6.2:** Do you agree that we should control (i) WLR Standard Connection when simultaneously provided with SMPF New Provide and (ii) WLR Start of Stopped MPF Line and its simultaneous provision with SMPF New Provide? Please provide reasoning for your answer.

- 6.121 In this Consultation we have not addressed stakeholder comments on our proposals in respect of WLR+SMPF Simultaneous Migration and will reach a decision on this in our statement in 2014. For the purposes of commenting on the proposals set out in this Consultation, it should be assumed that we maintain this proposal. However, we have made some changes to the way we derive the costs of WLR+SMPF Simultaneous Migrations (which we explain in more detail in Annex 11). For this reason we present the revisions to the expected charges for WLR+SMPF Simultaneous Migrations in Table 6.4.

**Table 6.4: Implementation of the charge control on WLR Conversion when provided simultaneously with SMPF New Provide**

Product Name		Charge controls (£, nominal prices)		
		2014/15	2015/16	2016/17
	Aligned migration services charge	31.5	32.4	33.2
a	WLR Conversion	31.5	32.4	33.2
b	SMPF New Provide	30.3	30.0	29.7
c	Discounted WLR Conversion charge (a-b)	1.2	2.3	3.5
d	WLR+SMPF Simultaneous Migration (b+c)	31.5	32.4	33.2

Scenarios 4, 5 and 6<sup>290</sup>

6.122 In Figure 6.3 above we have shown three additional scenarios (scenarios 4, 5 and 6) where, while the SMPF component requires work in the exchange, the WLR service does not. The WLR service required in each of these three scenarios is as described below:

- **Scenario 4 (migration from WLR+SMPF to WLR+SMPF):** in this case the CP only requires a WLR Transfer to migrate the WLR line;
- **Scenario 5 (provide a WLR+SMPF from a stopped WLR+SMPF line):** the CP requires a Start of Stopped WLR line; and
- **Scenario 6 (takeover of a WLR working line):** the CP requires a WLR Working Line Take Over (WLTO).

6.123 In all three of these scenarios, the WLR service required (i.e. WLR Transfer, Start of Stopped WLR line or WLR WLTO) relates to a systems update that Openreach needs to perform to transfer the line from one customer to another (with no jumpering work in the exchange involved). This implies that there will not be cost savings in terms of exchange work associated with simultaneously providing the WLR and SMPF services. Thus, we are not proposing to set charge controls that require Openreach to provide a discount when these services are provided simultaneously

<sup>290</sup> WLR Transfer and SMPF Single Migration; WLR Start of Stopped WLR Line and SMPF New Provide; and WLR Working Line Take Over and SMPF New Provide (respectively).

and we therefore propose to continue to maintain our approach to these services as set out in the July 2013 Consultation.

**Question 6.3:** Do you agree with our proposal not to set charge controls that require Openreach to provide a discount when WLR Transfer and SMPF Single Migration; WLR Start of Stopped WLR Line and SMPF New Provide; and WLR Working Line Take Over and SMPF New Provide are provided simultaneously? Please provide reasoning for your answer.

6.124 To summarise, Table 6.5 below presents our proposals relating to simultaneously provided WLR and SMPF services.

**Table 6.5: Regulation of WLR and SMPF services**

	From	To WLR+SMPF	Current regulation	Regulation	
				Individual service	Simultaneous Provision
1	No line	WLR Standard Connection	Charge control	Charge control	Charge control
		SMPF New Provide	Charge control	Charge control	
2	MPF	WLR Conversion	Cost orientation	Charge control	Charge control
		SMPF New Provide	Charge control	Charge control	
3	Stopped MPF line	Start of Stopped MPF Line	Cost orientation	Charge control	Charge control
		SMPF New Provide	Charge control	Charge control	
4	WLR+SMPF	WLR Transfer	Charge control	Charge control	No charge control
		SMPF New Provide	Charge control	Charge control	
5	Stopped WLR+SMPF	Start of Stopped WLR line	Charge control	Charge control	No charge control
		SMPF New Provide	Charge control	Charge control	
6	WLR Working Line	WLR WLTO	Charge control	Charge control	No charge control
		SMPF New Provide	Charge control	Charge control	

Source: Ofcom

## Re-allocation of costs between exchange-related services

### *Stakeholder comments*

6.125 Openreach noted that currently its engineers already co-ordinate the jumpering activity for the WLR Conversion and SMPF New Provide (when requested in parallel). It argued that the cost savings associated with this simultaneous provision were spread across products requiring jumpering work in the exchange and already reflected in BT's RFS. Consequently, it explained that Ofcom's proposal would result in under-recovery of its efficiently incurred costs. For this reason Openreach proposed that we should either:

- reduce the charge for simultaneous provision of WLR Conversion and SMPF New Provide (as proposed by Ofcom) but increase the charges for other services involving jumpering; or

- increase the proposed charge for simultaneous provision of WLR Conversion and SMPF New Provide.<sup>291</sup>

### Ofcom's revised proposals

- 6.126 In light of Openreach's response to the July 2013 Consultation, it follows that if we constrain the price of WLR Conversion and SMPF New Provide to reflect the efficiencies arising when they are provided simultaneously (without increasing the level of costs allocated to the services to which these savings are currently spread) Openreach would under-recover its costs. In addition, Openreach has indicated to us that the same applies for the other simultaneously provided services that we have described in the previous Section and which we are similarly proposing to charge control.<sup>292</sup>
- 6.127 For this reason, we believe that it is appropriate to first identify the services to which these cost savings have been attributed. Second, we then propose to re-allocate costs between these services and the simultaneously provided services to ensure that the costs attributed to each reflect more accurately the underlying resource costs. We explain in more detail how we are proposing to re-allocate costs across these services in Annex 11.

**Question 6.4:** *Do you agree that we should re-allocate costs between the services that have been attributed the cost savings associated with the WLR+SMPF simultaneous connections and migrations services so that all services involving jumpering at the exchange more accurately reflect their underlying costs? Please provide reasoning for your answer.*

## Caller Display

- 6.128 Caller Display (which we described as 'Caller ID' in the July 2013 FAMR Consultation)<sup>293</sup> is one of a number of calling and network features, some of which are provided by Openreach and some by BT Wholesale. Caller Display is an add-on service provided by Openreach alongside WLR. It allows the customer to see the caller's number before answering the call, provided they have suitable equipment.
- 6.129 In the July 2013 FAMR Consultation, we considered the issue of Caller Display, and the revenue that Openreach earns from supplying this service. We noted that it was likely that Openreach was charging above cost for this service, but that we understood that there was a capacity constraint in the supply of Caller Display, and that the current charge might be necessary in order to constrain demand.
- 6.130 Having further investigated the nature of this capacity constraint in the supply of Caller Display, we believe that it would be possible for this service to meet increased demand without a prohibitive level of investment in hardware and software. We do not, therefore, consider that a high charge, relative to cost, is necessary to constrain

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<sup>291</sup> Openreach response to the July 2013 Consultation, p. 45

<sup>292</sup> Openreach response to Question 12 of Twelfth s.135 request to BT dated 11 October 2013.

<sup>293</sup> Fixed Access Market Reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30, 3 July 2013. Paragraphs 14.51-14.74.

<http://stakeholders.ofcom.org.uk/consultations/fixed-access-market-reviews/>

demand. Given that Openreach's current charge for Caller Display is significantly above cost, we believe that it is appropriate to set a charge control for this service.

- 6.131 Caller Display has a number of costs that are allocated to it in the RFS. We propose to set the charge for Caller Display equal to the LRIC of the service, which we estimate to be £0.45 per line (within a range for consultation of £0.35 to £0.50) from the start of the next charge control. Under our proposals, 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. We consider that this is likely add between £0.15 to £0.25 to MPF rental charges and between £0.40 to £0.60 to WLR rental charges. We explain below the reason for the greater allocation to WLR. We invite stakeholders' views on these proposals.

### **Proposals in the July 2013 FAMR Consultation**

- 6.132 In the July 2013 FAMR Consultation, we proposed not to take into account the revenue that Openreach earns from Caller Display when setting charges for other services. This was consistent with the approach in previous reviews, where we have considered the Caller Display charge independently from other charges.
- 6.133 Although we did not propose to take the Caller Display revenue into account, we invited stakeholders' views on the implications for efficiency of different approaches, including on BT's investment incentives, on long term consumption signals for end users/CPs, on whether there might be any unintended consequences if we were to take the Caller Display revenue into account, and on what would be the rationale for using the revenue to reduce some charges and not others.
- 6.134 We also proposed not to re-impose a Basis of Charges obligation for calling and network features (of which Caller Display is one). Instead we considered that an obligation to supply on fair and reasonable terms including charges was sufficient protection from excessive charges.

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

- 6.135 BT Group argued that we should retain our present approach: that we should not take the revenue from Caller Display into account to reduce the price of other services. It argued, as previously, that it cannot serve an increased demand for the Caller Display service without considerable investment, and therefore that it cannot lower the wholesale charge.
- 6.136 BT argued that using revenue from caller display to reduce rental charges on WLR lines or on both WLR and MPF lines would artificially constrain these rental charges below their replacement costs. In addition, BT said that reducing charges for all WLR lines would benefit some CPs in excess of their use of Caller Display since there was "great variation" in the proportion of lines that take Caller Display between CPs. BT argued that reducing charges only for lines which take Caller Display would lead to a price (albeit in a bundle) which would generate extra demand that would exceed existing capacity.
- 6.137 EE considered that reducing the wholesale charge for Caller Display would not increase demand, as many CPs already offer it for free to retail customers. EE did not understand which element of BT's network could be at full capacity. EE wanted Ofcom to impose cost based charging on this service and thus reduce charges. However, EE said that if Ofcom was satisfied that there was a genuine cost

associated with increased demand, then the revenue that Openreach receives from Caller Display should be netted off the WLR cost stack.

- 6.138 Sky noted that it requires Caller Display and other call features from BT to serve some of its customers (i.e. those customers it serves using WLR/WLR+SMPF, rather than the customers its serves using MPF). It did not believe that the proposed fair and reasonable charging obligation would provide them with sufficient protection against Openreach raising the charge. It considered that Ofcom should maintain the current cost orientation obligation. In its response, Sky did not comment on the proposal to use the revenue to reduce rental charges.
- 6.139 Verizon did not support Ofcom's proposal to revoke the Basis of Charges obligation on 'calling and network features' (it did not specifically reference Caller Display). It did not believe that a 'fair and reasonable' obligation provided sufficient constraint on BT's pricing across the range of network features. It did not comment on the proposal to use the revenue from Caller Display to reduce charges for other services.
- 6.140 [X] noted that Ofcom appeared to have concluded that BT is making supernormal profits on Caller Display. As BT has a Basis of Charges obligation and there has been over-recovery, [X] said it must consider bringing a dispute against BT unless the supernormal profits are redistributed to the CPs that generated them. It did not accept BT's claim as to the costs of increasing capacity.

## Our revised analysis

### Openreach's charges for Caller Display are significantly above cost

- 6.141 In the 2013 FAMR Consultation, we said that we understood the cost of providing Caller Display was likely to be close to zero. However, we have now explored the costs of Caller Display in detail with Openreach using our statutory information gathering powers and we understand that the fully allocated costs (FAC) of Caller Display are greater than we previously assumed. In 2011/12, the FAC (consistent with the cost allocations in the RFS<sup>294</sup>) of Caller Display was [X]<sup>295</sup> [£10m-£15m] and the incremental cost was, we estimate, around [X]<sup>296</sup>. From 2011/12 volumes,<sup>297</sup> we calculate that the charge of the Caller Display service in 2011/12 would have needed to be [£2.50-£3.50] [X] to cover FAC and £0.45 to cover our estimate of the incremental costs, whereas the charge actually levied is £6.00. We discuss Openreach's costs for providing Caller Display in more detail below.

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<sup>294</sup> In response to our Thirteenth s.135 request, BT told us that these costs were allocated in the RFS to "Other Openreach markets and activities",

<sup>295</sup> Openreach has provided Caller Display costs to us in response to our Eleventh s.135 request to BT (question 1) and Thirteenth s.135 request (question 1). In these costs, the return on capital employed was calculated at the rate of 9.7%. We have changed this to 8.8% to be consistent with the estimate of pre-tax nominal WACC for Openreach. See Table A15.1 (page 109) in the Annexes to the July 2013 Consultation. <http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/annexes/annexes.pdf>

<sup>296</sup> See below for how we have reached our estimate of incremental cost.

<sup>297</sup> Openreach provided Caller Display volumes in response to our Thirteenth s.135 request to BT (question 2)

### Lowering the wholesale charge for Caller Display may increase demand

- 6.142 In its response to the July 2013 Consultation, BT argued that, if Ofcom were to set a lower charge for Caller Display at the wholesale level, then BT would expect to see an increase in demand<sup>298</sup> and, as we explain below, it considered that this increase in demand would be problematic to serve. We accept that demand for Caller Display may increase if the wholesale charge is significantly lowered.
- 6.143 From 1 February 2009, Openreach conducted a six-month trial in which the wholesale price of Caller Display was cut by 72%, from £6.00 to £1.68 per annum<sup>299</sup>. Openreach has told us that, over a three month period during the trial, the wholesale demand for Caller Display increased by [REDACTED]<sup>300</sup> [20-25%]. At the end of six months, at the start of August 2009, Openreach reverted its pricing for these services back to the pre-trial levels, where it currently remains.
- 6.144 We believe that the trial demonstrated that demand for Caller Display did increase when price was lowered, but that the response appears to have been fairly inelastic. However, we are aware that this demand response may have been suppressed to some extent because CPs knew that it was a trial and that it was possible that the low charge would be only temporary. They may, therefore, have been unwilling to promote Caller Display to their retail customers at a low price, in anticipation of a future higher charge at the wholesale level.
- 6.145 In its response to the July 2013 Consultation, EE argued that “...free Caller ID for end users is now the norm, meaning that the removal of the wholesale charge is unlikely to effect a change in demand.” We note that some CPs do offer caller display for free – namely EE, Sky, TalkTalk, AOL, Post Office and BT Retail (for certain customers<sup>301</sup>) – though in many cases it is an opt-in service and not heavily promoted. In addition, Sky and TalkTalk are mostly supplying their customers through MPF, which we believe does not face the same potential capacity issue as Caller Display provided over WLR lines, and hence it is less relevant that they do not charge end users for caller display. Certain CPs, however, do charge their customers for Caller Display, including Plusnet (£0.99 per month), BE (£2.04 per month), Virgin Media (£2.25 per month) and BT Retail (£3.30 per month, rising to £3.50 from April 2014 for those not using the BT Privacy at Home service).<sup>302</sup>
- 6.146 On the information presently available to us, it is not clear how large any increase in wholesale demand for Caller Display would be if the wholesale charge were to fall significantly. Currently only [REDACTED] [20%-30%] of WLR lines take caller display, but if the

<sup>298</sup> <http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-reviews/responses/BT.pdf>, see paragraph 397.

<sup>299</sup> Openreach's Caller Display prices over time are given at:

<http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=EwnpVKiM8jvUpuFwx0E%2FdRXQI8%2Bm%2BTHtnjVNUjalCHwlMnGHsqdC0vzO163bJmh34D91D7M0q8u%2F%0AIIStlFAKw%3D%3D>

<sup>300</sup> Openreach discussed the demand increase in a presentation to Ofcom in November 2012.

<sup>301</sup> According to its website, BT Retail offers caller display for free if customers sign up for BT Privacy At Home (and join the Telephone Preference Service). However, from April 2014, Caller Display will cost £1.75 per month even with BT Privacy At Home, unless customers sign up for a 12 month contract by December 2013.

<sup>302</sup> Source for retail caller display prices: Operators' websites, as at October 2013.

Redacted for publication [X<]

charge were to be much lower more CPs might automatically include it in their retail offers. This has the potential to increase demand for Caller Display.<sup>303</sup>

6.147 We therefore cannot rule out the possibility that a significant reduction in the wholesale charge for Caller Display could increase demand sufficiently such that users experience the effects of capacity constraints. We discuss below the potential implications of such an increase in demand in light of our analysis of BT's claimed capacity constraints.

#### Current capacity for Caller Display is likely to be able to cope with higher demand

6.148 While we accept that demand may increase with a lower wholesale charge, we do not agree with Openreach that the existing capacity constraints mean that higher levels of demand cannot be served and that, consequently, a high wholesale charge (relative to cost) must be maintained.

6.149 As we understand it, there is no absolute limit on the number of WLR lines which can be supplied with Caller Display. Rather, the fixed dimensions of Openreach's network mean that any growth in the number of lines which require the Caller Display service may have the effect of increasing the probability that the calling number information will fail to be displayed for any particular call. As we set out below, we have not seen evidence that this higher possibility of failure is likely to be a cause for concern.

6.150 Based on further exploration of the matter with Openreach, our current understanding of the capacity constraint in Caller Display is as follows<sup>304</sup>. The system works by using a Frequency Shift Keying (FSK) sender<sup>305</sup> at the exchange to enable Calling Line Identification (CLI) data to be sent down the line to an end-user's telephone (provided they have a suitable handset) or other Caller Display device. For the majority of Openreach's exchanges, specifically [X<], only [X<] simultaneous Caller Display FSK deliveries can be made per concentrator, [X<]. Each concentrator can service up to 2048 lines, and there will be more than one concentrator in larger exchanges.

6.151 It takes between 1.2 and 1.4 seconds to send the CLI signalling to the customer's telephone. This takes place just prior to ringing the handset. If no FSK sender is available, the handset will ring but the opportunity to present Caller Display information for that call will have been missed<sup>306</sup>. In such cases, the Caller Display service has failed and the end-user will not be able to see the calling number before answering the call. (We understand that 1471 will still work after the call and that call tracing is not affected.)

6.152 The implication of this, therefore, is that there is a statistical risk that more calls than the system can handle will be made simultaneously to the lines on a single concentrator. In such cases, there is a probability that the calling number will not be

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<sup>303</sup> This could mean it is provided to end consumers who would not be able to make use of it because they did not have a telephone with a screen (which is necessary to display the number of the caller).

<sup>304</sup> Based on Openreach's response to the Thirteenth Section 135 request (question 2), and discussions with Ofcom.

<sup>305</sup> A concentrator aggregates telephony traffic for up to 2048 lines before feeding it into the exchange processor. The FSK sender is the part of the concentrator voice platform which sends CLI signalling to the Customer Premises Equipment.

<sup>306</sup> There is some scope for calls to queue, waiting for an available concentrator.

displayed to the customer. This problem is not uniform across the network, but is affected by the switch type at a particular exchange.

- 6.153 As noted above, then, there is no 'hard' technical limit on the proportion of lines across the network, or even in an exchange, that can have Caller Display functionality. Rather, as the number of lines which subscribe to Caller Display increases, there is a higher probability that the number of simultaneously initiated inbound calls on a concentrator which require the transmission of CLI will exceed the number of available FSK senders and that the CLI data will not be transmitted for a particular call.
- 6.154 The likelihood of failure will, in the main, depend on the call rate to the group of lines on an individual concentrator, and on the number of these lines which subscribe to Caller Display.
- 6.155 Openreach has modelled the potential failure rates for the Caller Display service, for three different levels of take up and the results of this are shown in Table 6.6 below.

**Table 6.6: Openreach's estimates for the instantaneous failure rate of Caller Display at different levels of take-up**

Caller Display take-up (% of lines on a concentrator)	Instantaneous Failure Rate
[X] (Current level of take-up)	[X] [less than 0.5%]
[X] (Twice current level of take-up)	[8% to 10%]
100%	[X] [40% to 50%]

Source: Openreach

- 6.156 We understand that in making these modelling predictions Openreach has assumed the worst possible network conditions, e.g. the call rate is as high as 8 calls per second<sup>307,308</sup>, that it takes the maximum estimated time of 1.4 seconds to send the CLI signalling, and that the concentrator is at full utilisation (in terms of the number of lines it could support).
- 6.157 Openreach has not been able to supply us with evidence as to how likely it would be that these extreme conditions occur in practice. Rather, it has argued that such conditions may be observed in the case of auto-diallers targeting a sequence of numbers which were all served by the same concentrator. However, with number porting<sup>309</sup>, or a list of target numbers compiled with regard to factors other than geographic location, this effect is likely to be diluted. Openreach has also not been able to supply data on the actual failure rates. It is our view that the probability of these extreme conditions occurring simultaneously is very low and accordingly the

<sup>307</sup> [X]

<sup>308</sup> Assuming that a concentrator actually had the maximum of 2048 lines, this would equate to an average of over four calls per minute, per line. The decline in WLR volumes over recent years may mean that many concentrators now aggregate fewer than the maximum possible number of lines.

<sup>309</sup> Where people have moved house and retained their numbers, a geographic area will not necessarily match a sequential range of numbers.

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real world failure rates are likely to be significantly lower than Openreach's predictions.

- 6.158 We also note two trends which might have the effect of reducing the pressure on Openreach's system, even with a potentially greater level of Caller Display take up. WLR volumes are forecast to continue to decline over the charge control period, as customers move over to MPF. WLR rentals were 19.4m in 2011/12 and are forecast to be 15.9m in 2016/17<sup>310</sup>. In general, this is likely to reduce the number of lines on any given concentrator. If the number of FSK senders on the concentrator remains the same, then there are likely to be fewer lines per FSK sender. A given concentrator might, therefore, be less likely to reach the limit of the maximum simultaneous Caller Display information deliveries that can be processed. We also note that fixed call termination on the BT network is falling. The volume of fixed call termination fell from 80,815 millions of minutes (mm) in 2011/12 to 70,452mm in 2012/13<sup>311</sup>, a year on year decline of 13%. WLR lines fell by just 4% over the same period, which implies that the call termination volume per line has declined. We believe that it is reasonable to expect this downward trend in fixed call termination to continue and thus, for a given take up of Caller Display, we might expect to see fewer calls which require the CLI to be transmitted to the end-user<sup>312</sup>. This would also put less pressure on the capacity constraint.
- 6.159 Having studied the nature of the capacity constraint in more depth, we now consider that the potential degradation in quality of services that might result from significantly higher take up of Caller Display is unlikely to be a major concern.

#### The cost of expanding capacity for Caller Display

- 6.160 To the extent there is a capacity constraint, one potential option would be for BT to increase capacity. In the July 2013 FAMR Consultation, we presented Openreach's estimate that it would require an investment [X<] [in the low hundreds of millions] to increase the capacity to provide Caller Display to all WLR lines. This was based on a high-level feasibility study conducted by Openreach in April 2013.
- 6.161 We have now pursued the question of the investment required to increase capacity in detail with Openreach using our statutory information gathering powers and we understand that the vendor's technical specification for the equipment supports Openreach's previous estimate of the cost of increasing capacity. However, we also understand that it may be possible that the vendor's technical specification would allow increased capacity on an incremental basis for a much lower cost, and that the magnitude of the hardware and software costs to increase capacity could be as low as under £10m [X<].<sup>313</sup> Further work would be required to establish both the technical feasibility of this option and the validity of any lower estimates, nonetheless we note that it may be possible to increase the capacity to supply Caller Display to a limited extent, and without a significant replacement of the existing hardware.

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<sup>310</sup> See Table A8.2 in the annexes to the July 2013 Consultation.

<sup>311</sup> See Section 8.6.1 in the 2012/13 BT RFS.

<sup>312</sup> We note that this only reflects calls which are answered and not calls which are made but unanswered (for example, due to the caller number not being known). Therefore this is not a perfect proxy for the number of calls for which Caller Display may need to be provided.

<sup>313</sup> These new estimates were provided by Openreach in responses to our 13<sup>th</sup> Section 135 request (question 2).

6.162 However, as explained above, we believe that Openreach's existing systems will be able to supply an increased demand at acceptable service levels without investment in extra capacity being necessary. Therefore, based on our current understanding of the level of demand and the nature of the capacity constraint, we do not think that the cost associated with additional investment, even at the lower level now indicated possible by Openreach is likely to be appropriate. However, we will keep this analysis under review and consider our final position in light of stakeholder responses to this consultation.

### We propose to set a charge for caller display at the level of LRIC

- 6.163 For the reasons set out above, our present view is that it is not appropriate for Openreach to set a charge for the Caller Display service significantly above cost. On that basis we therefore consider that it would be appropriate and proportionate to set a charge control for this service.
- 6.164 A number of WLR users have argued that being able to provide caller line information (CLI) to end users, which is made possible by using Openreach's wholesale Caller Display service, is important to them in competing effectively at the retail level. For example, in its response to the July 2013 Consultation, EE said, "*Caller ID has become an essential feature for most landline users, with Sky, TalkTalk and BT Retail all offering it for free. In order to credibly compete, EE likewise bundles Caller ID free of charge with its broadband and landline package.*"<sup>314</sup> It was therefore a concern for some WLR users that the wholesale charge would be above costs in the period to 2016/17 under the proposals in the July 2013 Consultation.
- 6.165 There is also an important link between the availability of Caller Display functionality and Ofcom's wider policy concerns regarding unwanted or nuisance calls. We remain concerned at the number of unwanted or nuisance calls received by UK households, particularly more vulnerable consumers. Caller Display helps consumers to choose whether to answer a phone call by identifying the caller's number and thereby shield themselves from nuisance calls, report nuisance calls and effectively use the call blocking services that rely on Caller Display to block and filter calls.
- 6.166 Consistent with our approach to other services subject to a charge control, we have therefore considered Openreach's costs of providing this service and the extent to which these should be recovered in any controlled charge for Caller Display (e.g. on an FAC basis) or whether it would be appropriate to recover an element of those costs across other regulated charges (e.g. recovering only the LRIC of Caller Display from that service and common costs from other services).
- 6.167 In general, we believe that it is most efficient to set charges to reflect the LRIC of providing the service. When a service shares common costs with other services, it is typically necessary to include a mark-up above LRIC so that total costs can be recovered. However, in the case of the Caller Display service, we believe that it is more appropriate for the charge to reflect LRIC and for common costs to be recovered from other services. This is because we consider that it will promote productive efficiency (and competition on the merits) if the differential between WLR

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<sup>314</sup> <http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/EE.pdf> , page 18-19. EE notes in a footnote that BT Retail and TalkTalk offer Caller ID on an opt-in basis, and that BT Retail customers must make a minimum of two outgoing calls per month to qualify for the free service.

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(including those services that can be purchased as any add-on or buy-through such as Caller Display) and MPF reflects the LRIC differential for these services.

- 6.168 We also believe that setting a charge for Caller Display at LRIC will promote allocative efficiency. Remedies in the wholesale market will best promote allocative efficiency if they induce efficiency in the retail market. Allocative efficiency in the retail market depends to a large extent on the structure of prices, including the way in which those prices affect the consumption of services and the effect of that consumption on consumer welfare.
- 6.169 End-users suffer a detriment (or cost) from unwanted nuisance calls and subscribing to the Caller Display service may reduce the level of such calls, but the provision of Caller Display itself incurs a cost. A trade-off therefore needs to be made between these two costs. An efficient structure of retail charges would be one that allowed consumers to make this trade-off in an efficient way, that is if consumers were able to choose between either accepting the detriment caused by nuisance calls or paying the incremental costs of the service that led to the elimination of those calls. Provided consumers are fully informed about the potential benefits of Caller Display in helping to deal with nuisance calls, this implies that an efficient charge for Caller Display at the retail level would be one that reflected closely the incremental cost of the provision of the Caller Display service. Accordingly, an efficient charge at the wholesale level is likely to be one that would induce a retail price that reflected the incremental cost of Caller Display.
- 6.170 For these reasons, we consider that the charge for Caller Display should reflect LRIC, and not be used to recover common costs. This would result in a significantly lower charge for Caller Display, whilst maintaining BT's ability to recover common costs (given our proposal that common costs are instead recovered from the main rental charges).
- 6.171 The current charge for Caller Display of £6 p.a. is considerably above incremental cost. Therefore, consistent with our established approach to considering one-off reductions under certain circumstances, we propose to make an immediate one-off adjustment to reduce the charge for Caller Display to the level of LRIC<sup>315</sup>.
- 6.172 We have requested cost information from Openreach, using our statutory information gathering powers. We were not able to precisely estimate the level of LRIC for Caller Display. We therefore propose to use, as a proxy, the costs which Openreach describes as 'direct' costs of Caller Display. In 2011/12, these costs were around [REDACTED]. Based on 2011/12 volumes for Caller Display, a charge at the level of LRIC would entail a charge of £0.45 p.a.. We expect that this charge would be slightly different if we used 2012/13 costs and volumes. Further work is required to establish 2012/13 incremental costs and volumes for Caller Display and we will finalise our estimates in light of this and for the statement. For the purposes of this consultation, we are therefore consulting on a range of £0.35 to £0.50 for the Caller Display charge.

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<sup>315</sup> In the March 2011 Consultation for the LLU/WLR charge control review, we outlined circumstances under which we would consider one-off reductions in charges. We note that one circumstance is when "the previous charges were unregulated or are not subject to charge control and where Openreach's charges are high relative to costs." <http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/summary/wlr-cc-2011.pdf>, paragraph 3.96.

- 6.173 We have divided the remaining [REDACTED] of costs (i.e. the difference between FAC and 'direct' costs) into those that we regard as common to all WLR lines, and those which are common across all lines (i.e. WLR and MPF). The costs which we regard as common to all lines include electricity, computing, management pay, rent and rates and facilities management. These were [REDACTED] in 2011/12. We propose to recover these costs across all MPF and WLR lines. We propose to do this on an equal per line basis, in line with our proposed approach of setting WLR and MPF such that the differentials between them ultimately reflect LRIC differences. We have assumed that these costs are constant in nominal terms over the period we are considering, so that [REDACTED] is added to the WLR and MPF rentals in each year, which is equivalent to around £0.20 per line p.a. As noted above, there is some uncertainty about 2012/13 costs and volumes. We are therefore consulting on a range of £0.15 to £0.25 for the amount to be added to MPF rentals.
- 6.174 The costs which could be regarded as common to all WLR lines include core routing maintenance, depreciation of nodes used only for voice customers and other costs, and were [REDACTED] in 2011/12. We propose to recover these costs across all WLR lines, increasing WLR rental charges by a little under £0.30 p.a., making a total uplift of £0.45 p.a. when added to the common cost mark-up across all lines (i.e. both MPF and WLR). We are consulting on increasing WLR rental charges in the range of £0.40 to £0.60.
- 6.175 We recognise that future volumes are uncertain. Caller Display volumes could potentially rise considerably compared to 2011/12 given the reduction in the wholesale charge proposed, meaning that Openreach's future revenue from Caller Display may exceed the current level of costs. But there may also be some offsetting reduction of Caller Display levels due to the expected general decline in WLR and voice call termination volumes. Given the relatively small size of the Caller Display costs and revenues compared to other services within this charge control, we have not sought to develop a more sophisticated approach to forecasting the costs and volumes associated with Caller Display and therefore propose to assume that the relevant costs are constant in nominal terms over the period of the charge control.

**Question 6.5:** *Do you agree that we should now charge control the Caller Display service? Please provide reasoning for your answer.*

**Question 6.6:** *Do you agree that we should impose a one-off reduction in the Caller Display charge to LRIC (in 2014/15), with common costs reallocated across WLR and MPF as appropriate? Please provide reasoning for your answer.*

## Section 7

# Charge control cost allocations and modelling

## Introduction

- 7.1 This Section covers:
- 7.1.1 firstly our proposals for adjustments to cost allocations for broadband line testing costs: TAMs and evoTAMs, and DSLAM capital/maintenance;
  - 7.1.2 secondly our proposed approach for estimating the LRIC differential between WLR+SMPF v MPF (from paragraphs 7.48 to 7.81);
  - 7.1.3 thirdly our approach to the base year data for the charge control cost modelling (from paragraphs 7.82 to 7.98);
  - 7.1.4 fourthly our treatment of costs associated with deafness liability claim and BT's career transition centre within base year costs (paragraphs 7.99 to 7.109); and
  - 7.1.5 finally, an Analysys Mason a review of BT's approach to cost allocations within the 2012 RFS.<sup>316</sup> Analysys Mason made a number of recommendations within its Cost Allocation Report and we set below out how we have addressed them (from paragraph 7.110).

## Broadband line testing: costs of TAMs and evoTAMs

### Summary of revised proposals for costs of TAMs and evoTAMs<sup>317</sup>

- 7.2 We propose, as in the July 2013 Consultation, to recover TAMs costs only from MPF lines. While we have not yet reached a definitive view on the efficient costs of a TAM, our current view based on the available evidence is that it is likely to be around £5.50 per MPF line in 2011/12, and that this is unlikely to vary significantly over time.
- 7.3 In respect of evoTAMs costs, we are consulting on two options in relation to their recovery from regulated charges, namely:
- 7.3.1 Option 1 - Changing the approach to the recovery of evoTAMs costs so as to exclude evoTAMs costs entirely from SMPF line rental (as well as excluding them from the WLR line rental as we proposed in our July 2013 Consultation); or

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<sup>316</sup> Analysys Mason for Ofcom, *Review of BT's 2011/12 cost allocation for fixed access markets*, 27 November 2013, <http://stakeholders.ofcom.org.uk/consultations/fixed-access-market-llu-wlr-charge-controls> (Cost Allocation Report)

<sup>317</sup> A brief explanation of TAMs and evoTAMs is contained in the glossary. For a diagrammatic representation of the wiring for these assets in the access network see Annex 10 of the July 2013 Consultation.

- 7.3.2 Option 2- Recovering evoTAMs costs from all SMPF lines, by spreading the cost over all SMPF lines, whether or not they use evoTAMs. (Under this option there would also not be any recovery of evoTAM costs from WLR rental charges).
- 7.4 Our preferred option is to exclude all evoTAMs costs from the cost stack for SMPF rentals. For the reasons set out below, we consider that this would better reflect cost causation, the distribution of benefits and contribute to the promotion of effective competition.

### July 2013 Consultation proposals

- 7.5 In the July 2013 Consultation, we considered that in principle all Test Access Matrices (TAMs) costs should be recovered from MPF and all evolutionary Test Access Matrices (evoTAMs) costs should be recovered from SMPF. This was to reflect the usage of TAMs and evoTAMs, as TAMs are used by every MPF line and evoTAMs are used by some SMPF lines.
- 7.6 However, we noted that the TAMs costs allocated to MPF in the 2011/12 RFS were considerably higher than in the 2010/11 RFS and also compared to our modelling in the March 2012 Statement. The 2011/12 RFS had costs of £0.86 for evoTAMs allocated to SMPF lines and costs of £8.47 for TAMs allocated to MPF lines. Since we were not satisfied of the reasons for this, for the purposes of the July 2013 Consultation, we made a simple adjustment to equalise the broadband line testing costs for MPF and SMPF. As shown in Table 7.1 below, this simple adjustment resulted in £3.77 per year being allocated to each of the MPF and SMPF rentals for broadband line testing costs and none to WLR.

**Table 7.1: Broadband line testing adjustment in July 2013 Consultation**

	Unit cost per 2011/12 RFS	Adjusted 2011/12 unit cost
MPF	£8.47	£3.77
SMPF	£0.86	£3.77
WLR	£0.49	£0.00

- 7.7 We said we would continue to investigate the costs of broadband line testing.<sup>318</sup>

### Stakeholder responses to July 2013 Consultation

- 7.8 Openreach agreed that broadband line testing costs should be allocated on a “cost causal basis”. However, it considered that the costs for broadband line testing in the 2011/12 RFS were reasonable. It said there were three main reasons for the differences in costs between TAMs and evoTAMs:
- i) the asset life of LLU TAMs is 5 years whereas the asset life of evoTAMs is 7 years which is reflected in BT’s accounting treatment;

<sup>318</sup> See paragraphs 1.18, 3.83 to 3.95 and 6.136 to 6.152 of the July 2013 Consultation for more details

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- ii) costs for LLU TAMs are allocated across all MPF Rentals and costs for evoTAMs, which is available to all SMPF customers but has only been consumed by BT Wholesale for the 21C / WBC lines, are allocated across all SMPF Rentals. EvoTAMs are in fact therefore only used on a subset of SMPF lines; and
- iii) total investment in LLU TAMs is greater than that for evoTAMs as LLU TAMs have been deployed in a much larger number of exchanges.<sup>319</sup>

7.9 On the different asset lives for TAMs and evoTAMs, it said:

*“The reason for this difference is historical. The LLU TAMs asset life was set in 2002 by Openreach and reflected the contract terms with suppliers that applied at that time. However, the evoTAM asset life was inherited by Openreach when the ownership of evoTAMs was transferred to Openreach from BT Operate.”<sup>320</sup>*

7.10 Openreach said that if a 7 year asset life were used for TAMs instead of 5 years, then the cost of TAMs would be [§<] per MPF line in 2011/12.<sup>321</sup> It also said that if evoTAMs costs were only allocated to those SMPF lines that used an evoTAM, the cost would be £4.95 per line in 2011/12.

7.11 In terms of the footprint being smaller for evoTAMs and the potential impact on unit costs, it said:

*“By the end of 2011/12, evoTAMs infrastructure had been rolled out to [§<] exchanges whereas LLU TAMs infrastructure was available in [§<] exchanges. The footprint of evoTAM[s] on an exchange basis was therefore around two thirds of that for LLU TAMs.*

*There will clearly be a difference in investment for these differing footprints this will have a direct impact on the relative unit costs for these different test access technologies.”<sup>322</sup>*

7.12 EE agreed with our proposals to recover TAMs costs from MPF lines and evoTAMs costs from SMPF lines. It also said that Ofcom should fully investigate the broadband line testing costs, and it had very significant concerns about the simple allocation in the July 2013 Consultation.<sup>323</sup>

7.13 TalkTalk noted that Ofcom was reviewing the data on broadband line testing costs, and said it would comment on the relative costs for MPF and WLR in response to a future consultation.

7.14 Sky considered the recovery of TAMs costs only from MPF (which we proposed would be completed in 2016/17 in our July 2013 Consultation) was too rapid, and also that this approach did not promote cost minimisation for MPF. Sky considered that:

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<sup>319</sup> Paragraph 391 of Openreach’s response to the July 2013 Consultation

<sup>320</sup> Paragraph 393 of Openreach’s response to the July 2013 Consultation

<sup>321</sup> As we explain below, Openreach later revised its estimate of the cost of TAMs if a 7 year life were used to be £6.56 per MPF line in 2011/12.

<sup>322</sup> Paragraph 399 and 400 of Openreach’s response to the July 2013 Consultation

<sup>323</sup> EE’s answer to question 6.4 of its response to the July 2013 Consultation.

*“... MPF is not consumed in any material volume by BT’s retail divisions and, therefore, BT’s incentives to reduce costs for MPF are tempered by the incentive to raise the relative costs of its rivals in retail markets. This is most relevant for MPF costs that are unique to it – as is the case with TAM costs. To date, because the TAM adjustment shares TAM costs with SMPF – which is consumed by BT’s downstream divisions – cost minimisation incentives have not been tempered in this way to the same extent.*

*However, if Ofcom removes the TAM adjustment, the cost minimisation incentives with respect to TAM costs will be reduced.”<sup>324</sup>*

- 7.15 Virgin Media considered that the proposal to remove the TAMs pricing adjustment, which supports the overall policy objective of reducing the WLR+SMPF minus MPF differential, is appropriate and justified. Virgin Media said that the magnitude of the adjustment, and the previously signalled intention of Ofcom in relation to phasing out the TAM adjustment, made the next control period the time right for its removal.
- 7.16 Vodafone considered that charges should be truly cost reflective for TAMs and evoTAMs.
- 7.17 [X] considered allocating the TAMs to MPF and the evoTAMs to SMPF to be correct. It said it would expect TAMs to have a higher cost than evoTAMs.
- 7.18 We note that some respondents also commented on whether any adjustments to TAMs and evoTAMs costs should be made through glide paths or through an immediate adjustment. Some respondents argued for an immediate adjustment and others argued that even by the final year of the charge control we are setting (in 2016/17) this adjustment should not be made in full.

## **Our revised analysis**

### Recovery of TAMs costs from MPF

- 7.19 Given that TAMs are only used by MPF, we consider there is a strong case for only recovering TAMs costs from MPF. The TAM is an integral part of the provision of MPF and is not used by WLR or SMPF. Therefore, MPF can be regarded as causing the TAMs costs. Moreover, MPF is the only service that benefits from the line testing capability of TAMs.
- 7.20 We note Sky’s argument that cost minimisation incentives may be weaker on Openreach for costs that are only incurred in the provision of MPF services (which it does not purchase), and that spreading these costs over both MPF and SMPF may give Openreach stronger cost minimisation incentives. However, we are investigating TAMs costs in detail and consider that we will be in a position to determine an efficient cost for TAMs after further scrutiny of BT’s reported TAMs costs. Moreover, the nature of a charge control, once set, is to produce incentives for cost minimisation over the control period. This cost reducing incentive is stronger the longer the control period and/or if a glide path is used from one control period to the next.

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<sup>324</sup> Paragraphs 10.20-10.21 of Sky’s response to the July 2013 Consultation.

- 7.21 We therefore propose to maintain our proposal in the July 2013 Consultation that in principle TAMs costs should only be recovered from MPF.

#### Update on costs of TAMs and evoTAMs

- 7.22 In the 2011/12 RFS, the TAMs costs were £8.47 per MPF line, and the evoTAMs costs were recovered from both SMPF and WLR, with £0.86 per SMPF line and £0.49 per WLR line. As set out in the July 2013 Consultation, we propose not to recover evoTAMs from WLR in future.<sup>325</sup> If the evoTAM costs in the 2011/12 RFS were all recovered from SMPF (with none recovered from WLR), this would mean that the evoTAM cost per SMPF line would be £1.70 in 2011/12.
- 7.23 Since the July 2013 Consultation we have identified the following main reasons for the difference in cost in the 2011/12 RFS between evoTAMs per SMPF line (of £1.70) and TAM costs per MPF line (of £8.47):<sup>326</sup>
- 7.23.1 Openreach had incorrectly allocated some costs relating to the installation of evoTAMs to tie cables.<sup>327</sup> With these costs correctly allocated to evoTAMs, Openreach estimates that the CCA FAC for evoTAMs would increase by [X] in 2011/12.
- 7.23.2 Only a minority of SMPF lines had evoTAMs in 2011/12. The evoTAMs costs that related to a minority of SMPF lines were spread over all SMPF lines. In contrast, if we consider the costs of evoTAMs per SMPF line that used an evoTAM (and also uplift them for the cost allocation error mentioned above) we calculate the cost would be around £6.75 per SMPF line.
- 7.23.3 Under Openreach's accounting policies evoTAMs are depreciated over 7 years, whereas TAMs are depreciated over 5 years. If an asset life of 7 years were used for TAMs, Openreach said in its consultation response that the cost would be [X] per MPF line in 2011/12. It has recently provided to us a revised calculation that the TAMs cost per MPF line in 2011/12 would have been £6.56.<sup>328</sup> This is a lower TAM cost per line than the evoTAM costs per SMPF line which uses an evoTAM.
- 7.24 In the context of the Single Jumpered MPF Dispute, Openreach told us that currently [X]% of TAMs were fully depreciated, which suggests that since MPF was launched over 8 years ago, the economic life of TAMs is longer than 5 years. We therefore consider that a longer asset life than 5 years should be used for TAMs. We consider

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<sup>325</sup> See paragraphs 6.148 to 6.150 of the July 2013 Consultation.

<sup>326</sup> There are other differences between evoTAMs and TAMs which affect the relative cost per line, such as the way they are installed. For example, unlike TAMs, evoTAMs are used in an 'in-line' configuration. (For more details see paragraphs A2.25 to A2.26 of Ofcom, *Dispute between TalkTalk Group and BT Openreach about single jumpered MPF – Statement and determination*, 15 November 2013). The deployment footprints of exchanges for which TAMs and evoTAMs have been installed are also different, which is likely to affect the average price for each. In 2011/12, evoTAMs were installed on a significantly smaller number of exchanges than TAMs. On average, evoTAMs are likely to be in bigger exchanges and are likely to benefit from larger economies of scale, tending to mean lower unit costs.

<sup>327</sup> We consider the possible implications of this for the calculation of the X for the proposed tie cable basket in the footnote to paragraph 6.63 above.

<sup>328</sup> BT's response of 2<sup>nd</sup> December to the 13<sup>th</sup> information request, question 6.

that an asset life of 7 years is likely to be appropriate. This is consistent with the asset life assumed in the Single Jumpered MPF Dispute.<sup>329</sup>

- 7.25 We are reviewing Openreach's recent calculation of what the TAMs costs would have been in the 2011/12 RFS had a 7 year asset life been used. We are also reviewing capital expenditure on TAMs over time, and the detailed cost information on TAMs costs provided as part of the Single Jumpered MPF Dispute. While we have not yet reached a definitive view on the appropriate cost of a TAM, our provisional view based on the available evidence is that a figure of around £5.50 per MPF line is likely to be reasonable. This is higher than the figure of £3.77 that we used for the purposes of the July 2013 Consultation.
- 7.26 We have used £5.50 for the 2016/17 TAM cost per MPF line when producing the figures in this consultation. In our scenarios, we have used a range for the TAM cost per MPF line that ranges from a high of £6 to a low of £3.77, which is the figure used in the July 2013 Consultation.
- 7.27 Turning now to evoTAMs, Openreach forecasts that the proportion of SMPF lines that will have an evoTAM will increase from [REDACTED] in 2011/12 to nearly [REDACTED] by 2016/17. This is for two reasons. Firstly, of the SMPF lines taken by BT Wholesale, the proportion that are used to provide Wholesale Broadband Connect services (an ADSL2+ service), which use evoTAMs, is expected to grow in the future. Secondly, the number of SMPF lines that are used by CPs other than BT (none of which are expected to use evoTAMs) is expected to fall. Openreach's forecasts are of the *actual* proportion of SMPF lines with evoTAMs, whereas we are forecasting the number of SMPF lines assuming a hypothetical ongoing copper only network (and so we are not taking into account the shift from SMPF to GEA in our volume and cost forecasting). Nevertheless, even on our hypothetical forecasting basis, we consider it reasonable to assume that the proportion of SMPF lines with evoTAMs would rise significantly by 2016/17. This will increase the evoTAM costs when spread over all SMPF lines.

### Revised proposal for recovery of evoTAMs costs

- 7.28 Based on the current approach to recovering evoTAM costs from all SMPF lines, the costs attributed to SMPF would rise significantly in the future as the proportion of SMPF lines with evoTAMs rises. Partly because of this, we have reconsidered whether it is appropriate to spread the costs of evoTAMs over all SMPF lines.
- 7.29 Spreading the cost of evoTAMs over all SMPF lines means that those SMPF lines that do not have evoTAMs still pay part of the evoTAMs cost. Recovering the costs from all SMPF lines does not reflect cost causation, in the sense that evoTAM costs are only caused by those lines that use evoTAMs. Recovering the costs from all SMPF lines does not reflect the distribution of benefits either, as any benefits of enhanced testing functionality are only likely to be of benefit to lines connected to evoTAMs, rather than all SMPF lines.

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<sup>329</sup> Paragraphs A3.142 and 4.137, Ofcom, *Dispute between TalkTalk Group and BT Openreach about single jumpered MPF – Statement and determination*, 15 November 2013, [http://stakeholders.ofcom.org.uk/binaries/enforcement/competition-bulletins/open-cases/all-open-cases/cw\\_01019/determination.pdf](http://stakeholders.ofcom.org.uk/binaries/enforcement/competition-bulletins/open-cases/all-open-cases/cw_01019/determination.pdf)

- 7.30 Recovering evoTAMs costs from all SMPF lines is a particular concern because the only SMPF lines that are connected to evoTAMs are those used by BT Wholesale in the provision of Wholesale Broadband Connect (an ADSL2+ service).
- 7.31 In light of the above, we are therefore consulting on the view that it is more appropriate *not* to recover the evoTAMs costs through SMPF charges in the future. In our base case we have therefore not included any costs for evoTAMs in the SMPF charges.
- 7.32 While in the base case we have assumed that no evoTAM costs are recovered from SMPF in 2016/17, in our high scenario, we have allowed for the possibility of evoTAMs costs being recovered from SMPF, and in this case we have assumed that £6.75 of costs is recovered per line for evoTAMs from SMPF.
- 7.33 We propose to remove evoTAMs costs from the SMPF rental charge by means of a one off adjustment rather than through a glide path. We explain our reasons for this in Section 8.

**Question 7.1:** *Do you agree with our proposal to change the approach to the recovery of evoTAMs costs so as to exclude evoTAMs costs from the SMPF line rental? Do you agree with our revised assessment of TAMs costs? Please provide reasoning for your answer.*

## Allocation of DSLAM Capital Maintenance to SMPF

### July 2013 Consultation proposals

- 7.34 In the July 2013 Consultation, we set out our estimate of the FAC of WLR and LLU rental services in 2016/17 broken down by cost components. Table 6.8 of the July 2013 Consultation shows our estimate of 'DSLAM capital/maintenance' component costs for SMPF rentals of £1.06 per line. In the 2011/12 RFS, the starting point for our cost forecasting was £1.31 per SMPF rental line.
- 7.35 Subsequent to the July 2013 Consultation, we investigated this issue further as we would not expect DSLAM costs to be allocated to SMPF. This is because a DSLAM (Digital Subscriber Loop Access Multiplexer) is the active equipment used to terminate DSL enabled local loops, which comprises a bank of DSL modems and a multiplexer which combines many local loops into one data path. DSLAMs are installed and owned by the CP which is the providing the DSL broadband service. This issue was also highlighted in the Analysys Mason Cost Allocation Report.<sup>330</sup>

### Our analysis

- 7.36 We used our statutory information gathering powers to request from BT information on what DSLAM costs had been allocated to SMPF and the basis for that allocation.<sup>331</sup>
- 7.37 In its response, BT informed us that the 'DSLAM capital/maintenance' component is a "super component". This means that it is an aggregate of more than one cost

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<sup>330</sup> Page 23 of the Analysys Mason Cost Allocation Report.

<sup>331</sup> 11<sup>th</sup> s.135 to BT issued on 4 October 2013, response received on 18 October 2013.

component. One of the components within this category is 'Openreach DSLAM capital/maintenance.' BT<sup>332</sup> has told us that, contrary to its name, this component does not relate to DSLAM costs (either capital or maintenance), but instead relates to a specific class of work 'MDSL', which relates to the maintenance of DSL.

- 7.38 BT has told us that the component cost relating to the component 'Openreach DSLAM capital/maintenance' is c. £15m in 2011/12, of which approximately one quarter [X] is currently allocated to external SMPF rentals.
- 7.39 After closer inspection of the costs associated with broadband faults BT has suggested that, based on Openreach's national job recording system, the majority (c.70%) of the £15m of broadband faults relate to Special Fault Investigations (SFIs), with the remaining 30% relating to broadband-related faults. The faults which relate to SFIs should not be included in the costs of rental products in our charge control as they are separately charged for. Therefore we propose to reduce the base year (2011/12) capital and operating costs for SMPF to reflect this. The revised total cost that we propose to include in the model is calculated as follows:
- Total £m amount of DSLAM capital/maintenance to be allocated to MPF and SMPF rentals = Total costs for Openreach DSLAMs \* (1-% of total Openreach DSLAM costs which relate to SFIs) = £15m\*0.3 = £4.5m.*
- 7.40 We now consider the appropriate allocation of the remaining 30% of costs. BT suggests that the costs should be allocated to MPF rentals and SMPF rentals, weighted by volumes and fault rates. As BT has suggested that the faults falling within this cost component relate to broadband only faults, we do not think it would be appropriate to allocate costs based on a ratio between MPF rental faults and SMPF rental faults. This is because the MPF rental fault rate includes faults affecting both voice and broadband. We do not consider that we have sufficient evidence to support an allocation based on relative fault levels for broadband only services.
- 7.41 As these faults should be captured by the faults data which was reviewed as part of this consultation, these faults informed our approach to allocating faults costs to the following components: E-side copper current; D-side copper current; Local exchange general frames current; and PSTN drop maintenance. Therefore, we consider that our approach to allocations of these broadband faults should be consistent with the allocation of other fault-related costs.
- 7.42 We have also applied the service level differential to this component as we consider that regardless of where the fault occurs in the network equipment covered by this charge control, we believe that the additional costs of a quicker response for Service Level 2 compared to Service Level 1 would apply.
- 7.43 However, as explained in paragraphs A13.6-A13.24 of the July 2013 Consultation, the Cost Model only includes costs and volumes for external SMPF rentals and not internal SMPF rentals. Therefore we also need to remove the proportion of the remaining DSLAM capital/maintenance costs that relates to internal SMPF rentals. This is explained in paragraphs A12.22 – A12.23 in Annex 12.
- 7.44 In terms of the phasing of these changes, we propose to remove the costs which relate to SFIs as a one-off adjustment. However, for the costs that are re-allocated

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<sup>332</sup> In its response to the 11<sup>th</sup> s.135 on 18 October and subsequent correspondence.

from SMPF only to WLR, SMPF and MPF we propose a glide path over the control period. See Section 8 on our approach to setting the glide path for our reasoning on the timing of the adjustments.

### Proposal for DSLAM capital/maintenance costs

- 7.45 Following further scrutiny of this cost component, we propose to reduce DSLAM capital/maintenance costs in the Cost Model – in particular to remove the costs which should properly be allocated to SFI products – as a one-off adjustment. The impact of the one-off adjustment is to reduce SMPF rental costs by £0.96 per line in 2014/15.
- 7.46 We also propose by 2016/17 to allocate the remaining costs using the faults and service level ratios which we have applied to other fault-related cost components. For the purposes of the Cost Model, this requires us to remove the costs relating to internal SMPF.
- 7.47 The 2016/17 unit cost for DSLAM capital/maintenance in SMPF will reduce from £1.06 to £0.02 as a result of this. The cost recovered from MPF rentals will increase from nothing to £0.12 and the cost recovered from WLR rentals will increase from nothing to £0.15 per line.

**Question 7.2:** *Do you agree with our proposal to immediately remove 'DSLAM capital/maintenance' costs associated with SFI faults from the Cost Model? Please provide reasoning for your answer.*

**Question 7.3:** *Do you agree with our proposal by 2016/17 to allocate the remaining 'DSLAM capital/maintenance costs on a consistent basis with our treatment of other fault-related costs, by means of a glide path? Please provide reasoning for your answer.*

### Estimation of LRIC differentials

- 7.48 In this Section, we set out our calculation of the differences in LRIC between WLR/WLR+SMPF and MPF. Recognising there is some uncertainty in the calculation, we consider that the LRIC differential between WLR+SMPF and MPF is in the range £0 to £4 per line per annum, and the LRIC differential between WLR and MPF is in the range -£3 to £2 per line per annum.

#### WLR+SMPF minus MPF LRIC differential

- 7.49 In the July 2013 Consultation, we proposed setting charges such that the differentials between WLR/WLR+SMPF and MPF rentals reflect the differences in LRIC. We estimated the LRIC differentials using service level LRIC to FAC ratios.<sup>333</sup>
- 7.50 We scrutinised the component level LRIC data to ascertain whether it was suitable for calculating the LRIC of the relevant services. We found that the LRICs for certain components appeared somewhat volatile over time and others produced counter-intuitive results, such as a LRIC greater than the FAC figure. For this reason, we did not favour using the 2011/12 LRIC figures at a component level.

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<sup>333</sup> See paragraphs 6.153 to 6.164 of the July 2013 Consultation, [http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/summary/LLU\\_WLR\\_CC\\_2014.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/summary/LLU_WLR_CC_2014.pdf)

- 7.51 In using the service level LRIC to FAC ratios, we used the average from the Regulatory Financial Statements for 2009/10 and 2010/11. We did not use the LRIC to FAC ratios from the 2011/12 Regulatory Financial Statements because some of them appeared unusual compared to earlier years. In particular, compared to earlier years, the LRIC to FAC ratio for MPF was high relative to WLR.
- 7.52 Given the further proposals set out in this consultation, we have revised our FAC figures for the WLR, MPF and SMPF rentals. Table 7.2 below shows the LRIC differential between WLR+SMPF and MPF, based on our revised FAC figures and the service level LRIC to FAC ratios used in the July 2013 Consultation. It shows that this LRIC differential would be around £3.40 (in 2016/17).

**Table 7.2: WLR+SMPF minus MPF differential, using service level LRIC:FAC ratios**

<i>£ per line per year, 2016/17, nominal prices</i>	FAC	LRIC:FAC ratio	LRIC
MPF	90.93	54%	49.10
WLR	88.63	55%	48.75
SMPF	4.33	87%	3.77
(WLR+SMPF)-MPF	2.03	n/a	3.41

Source: Ofcom and, BT's 2010 RFS and 2011 RFS for LRIC:FAC ratios

- 7.53 Because of the importance of the LRIC differential in setting regulated charges for WLR, SMPF and MPF<sup>334</sup>, for this consultation we have further considered our approach to estimating this differential. We recognise, for instance, that the service level LRIC:FAC ratios in the RFS in 2009/10 and 2010/11 will not reflect some of the adjustments that have been made in our modelling, such as excluding directory costs, excluding the line length adjustment, excluding evoTAMs and our revised estimate of TAM costs.
- 7.54 We have given further consideration to whether it would be appropriate to estimate the differentials on a bottom up basis, using cost components consistent with our modelling. We have sought to do this by estimating the LRIC in 2016/17 for each cost component, using the AVE and CVE in our model for that year. We have used a weighted average of the AVEs and CVEs, with the weighting depending on the relative share of capital costs and operating costs in the total unit costs.<sup>335</sup>
- 7.55 Estimating a component level differential between WLR+SMPF and MPF is more straightforward than for WLR and MPF. This is because there is only a small number

<sup>334</sup> See from Section 8 below for why we consider the LRIC differential to be important.

<sup>335</sup> The CVEs that we used were adjusted as explained in paragraphs 6.89 to 6.92 of the July 2013 Consultation.

Redacted for publication [X<]

of differences between WLR+SMPF and MPF services. For the purposes of this assessment, we do not need to consider components that are the same in the two costs stacks, and so can focus only on the components which differ between the two services.

7.56 The main differences between WLR+SMPF and MPF that we have identified are:

7.56.1 WLR includes a PSTN line card (whereas MPF does not);

7.56.2 MPF includes a TAM (whereas WLR does not); and

7.56.3 MPF is delivered to a higher Service Level than WLR

7.57 There is no difference in the use of the main distribution frame (MDF or frame) between WLR+SMPF and MPF, as both involve two jumpers across the frame.<sup>336</sup> We also believe that the fault levels for WLR+SMPF and MPF should be equalised, as explained in Section 5.<sup>337</sup>

7.58 Table 7.3 below shows the main factors (sometimes comprising more than one component) that make up the FAC and LRIC differences between WLR+SMPF and MPF in our model. The list of differences between WLR+SMPF and MPF is largely as we would expect, as it largely relates to line cards, TAMs and components affected by different Service Levels. There are no differences in the significant cost components relating to duct and copper capital costs, as they are used equally by lines, whether MPF or WLR+SMPF (partly as a result of our policy decisions, for example, on line length and faults).<sup>338</sup>

**Table 7.3: WLR+SMPF minus MPF cost differential on a component basis in our Cost Model**

<i>£ per line per year, 2016/17, nominal prices</i>	(WLR+SMPF)	Average <sup>339</sup>	(WLR+SMPF)
	- MPF	LRIC:FAC	- MPF
	FAC		LRIC

<sup>336</sup> This can be seen by comparing Figure A10.2 and Figure A10.3 in Annex 10 of the July 2013 Consultation.

<sup>337</sup> While the provision of both WLR+SMPF and MPF products involve three tie cables connecting to the main distribution frame, with WLR+SMPF two tie cables are bought separately whereas for MPF only one tie cable is bought separately. This means that there is one more tie cable included in the MPF rental compared to the WLR+SMPF rentals. In our assessment of the LRIC differential in the March 2012 Statement we included a separate line item for the extra tie cable associated with the MPF rental. We have not done so here because this extra tie cable is already included in the TAM costs we are using. See paragraphs 7.129 to 7.131 of the March 2012 Statement for more explanation of the recovery of tie cable costs.

<http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/statement/statementMarch12.pdf>

<sup>338</sup> See paragraphs 3.96 to 3.104 of the July 2013 Consultation for our proposals on line length.

<sup>339</sup> The LRIC to FAC ratios in each row in the table (and subsequent tables in this section) are the weighted average of the LRIC to FAC ratios for the relevant components for each row, which in turn are derived from a weighted average of the AVEs and CVEs for each component, as explained in paragraph 7.54 above.

Line cards (including reallocation of certain costs previously recovered from caller display)	10.65	70%	7.51
TAMs	-5.50	92%	-5.07
Service level (including D-side and E-side copper current, drop wire maintenance and frame maintenance)	-1.80	72%	-1.30
Service centre - assurance	-1.04	90%	-0.93
Other minor differences in cost components	0.04	106%	0.04
<b>Total</b>	<b>2.35</b>	<b>n/a</b>	<b>0.24</b>

Source: Ofcom

- 7.59 In Table 7.3 we have included the costs we are proposing to reallocate from Caller Display to WLR within the line card costs. We do this because these are costs that relate to equipment used to provide voice services, and are common between Caller Display and WLR, but are incremental when considering those services together.<sup>340</sup> This reallocation of caller display costs means that the FAC difference is about 30p more than in Table 7.2 above.<sup>341</sup>
- 7.60 This analysis indicates a FAC differential between WLR+SMPF and MPF a little under £2.50 and a LRIC differential of only £0.25.
- 7.61 Much as there are uncertainties with the top-down service level LRIC:FAC analysis, there are also important uncertainties with the component level FAC and LRIC differentials that are produced by our model currently:
- 7.61.1 **“Service centre – assurance”** costs are significantly higher for MPF compared to WLR+SMPF (around £1 – see Table 7.3 above), and we are not convinced the difference should be as large as it appears to be. These costs relate to an allocation of the costs of operating the service centres dealing with repairs and also include the payments to customers under the repair SLG schemes.

<sup>340</sup> See from paragraph 6.172 for more explanation of the adjustment for caller Display Costs.

<sup>341</sup> We have also assumed that this difference is around 30p for the LRIC estimate of line cards (and have adjusted the LRIC:FAC ratio upwards slightly compared to what it would otherwise be to reflect this). This adjustment of around 30p only reflects the additional costs that are allocated specifically to WLR. It does not include the common costs that we have allocated to both WLR and MPF equally on a per line basis, as that does not affect the differential between the two charges. See from paragraph 6.131 above for more explanation of the changes to the rental charges as a result of allocation common costs away from Caller Display.

- a) Given that we have made assumptions about relative fault rates and the cost of different Service Levels, we consider that it may be appropriate to amend the service centre assurance costs in the same way as we have adjusted other component costs (such as D-side copper current costs) that are affected by faults and Service Levels. We have not done this for this consultation, but would welcome stakeholder views. If we did this, it would reduce the higher service centre assurance costs of MPF, as there would be no difference for service centre assurance costs for faults and the difference for Service Level costs would be modest. This would tend to increase the overall difference between WLR+SMPF and MPF costs.
- b) We calculate that if we adjusted service centre assurance costs in the same way as we have adjusted other cost components affected by faults and Service Levels, then MPF service centre assurance costs would only be around £0.15 above WLR+SMPF.

7.61.2 **The LRIC to FAC ratio for line cards is 70%.** We note that in earlier years the LRIC to FAC ratio for PSTN line cards has typically been over 90%. We believe the lower LRIC to FAC ratio in the model may result from the heavily depreciated nature of the assets and may not be truly representative of the LRIC to FAC ratio for a hypothetical ongoing network.

- c) Below we have explored the implications of increasing the LRIC to FAC ratio for line cards to move it more into line with the LRIC to FAC ratio in earlier years. For this illustration, we have used 92%, which is more consistent with past values of the ratio and is also the same as the LRIC to FAC ratio for TAMs, an asset which also enables line testing (which is part of the functionality offered by PSTN line cards).<sup>342</sup>

7.62 Table 7.4 below shows a revised calculation of the WLR+SMPF minus MPF cost differential, which makes the two changes mentioned above. We have also ignored the other minor differences (less than £0.05 in Table 7.3 above). We consider it possible that these minor differences result from cost allocation rules that do not perfectly reflect the underlying differences between products, but we do not consider these costs to be sufficiently material to warrant detailed investigation.

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<sup>342</sup> We recognise that adjusting the LRIC:FAC ratios for particular components (such as line cards) for the purposes of estimating the LRIC differentials would not be strictly consistent with the estimation of total costs in the model. Ideally adjustments to LRIC:FAC ratios should be made consistent between the estimation of the LRIC differential and the estimation of total costs. We will consider this further for the Statement. This point also applies to the adjustment we consider for frames capital costs later in this section.

**Table 7.4: Adjusted component level calculation of WLR+SMPF minus MPF cost differential**

<i>£ per line per year, 2016/17, nominal prices</i>	(WLR+SMPF) - MPF	Average LRIC:FAC	(WLR+SMPF) - MPF
	FAC		LRIC
Line cards (including reallocation of certain costs previously recovered from caller display)	10.65	92%	9.82
TAMs	-5.50	92%	-5.07
Service level (including D-side and E-side copper current, drop wire maintenance and frame maintenance)	-1.80	72%	-1.30
Service centre - assurance	-0.15	90%	-0.14
<b>Total</b>	<b>3.19</b>	<b>n/a</b>	<b>3.31</b>

Source: Ofcom

- 7.63 This component level estimate results in a LRIC differential of around £3.30, which is broadly consistent with the approach to estimating the differential based on the service level LRIC to FAC ratios.
- 7.64 For the component level estimates, there is uncertainty over the FAC for each component, and also over the appropriate LRIC:FAC ratio for each component. There are also uncertainties with the top down estimates, especially over the appropriate LRIC:FAC ratios for each service.
- 7.65 On the balance of the available evidence presented above, and subject to stakeholder responses, our preliminary view is that the LRIC differential between WLR+SMPF and MPF is likely to be in the range £0 to £4 per line per annum. For the purposes of the option discussed in the next Section where we consider whether we should control charges so as to reflect the difference in LRIC by 2016/17, we have chosen the mid-point of this range and have assumed it is £2.
- 7.66 This new range is at a much lower level than the range we set out in the March 2012 Statement, where we estimated a range of £10 to £14 (for 2013/14). It is also lower than the £9.90 base case differential in our July 2013 Consultation.<sup>343</sup>

<sup>343</sup> See Table A6.2 from the July 2013 Consultation.

7.67 The single largest reason for this relates to changes in our analysis relating to broadband line testing costs.

- In the March 2012 Statement we considered that WLR+SMPF and MPF would be very similar in terms of line testing costs.<sup>344</sup>
- Similarly, in our base case in the July 2013 Consultation, we assumed that there would be no difference in broadband line testing costs for WLR+SMPF and MPF.<sup>345</sup>
- Our revised proposal is not to include any evoTAM costs in the SMPF charge.<sup>346</sup>
- We have also reviewed the costs of TAMs, and our current view based on the available evidence is that it is likely to be around £5.50 per MPF line.<sup>347</sup>

7.68 This change in assessment of broadband line testing costs results in a change of around £5 in our estimate of the LRIC difference between this consultation and both the March 2012 Statement and the July 2013 Consultation.

### **WLR minus MPF LRIC differential**

7.69 In the past we have focussed on the differential between WLR+SMPF and MPF, and have considered the differential between WLR and MPF to be less important.<sup>348</sup> This was because in the past MPF has been almost exclusively used to provide voice *and* broadband services. However, it is becoming more prevalent for MPF to be used to provide voice services, with the broadband being provided via FTTC. This may make the differential between WLR and MPF charges more important than it has been in the past.

7.70 Using the approach in the July 2013 Consultation of calculating the LRIC differentials using service level LRIC to FAC ratios, but using our latest estimates of the FACs for WLR and MPF would imply that MPF was around £2.30 more expensive than WLR on an FAC basis and around £0.30 more on a LRIC basis.

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<sup>344</sup> See Figure 7.9 of the March 2012 Statement,

<http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/statement/statementMarch12.pdf>

<sup>345</sup> In the July 2013 Consultation, in our base case, we assumed that broadband line testing costs would be £3.77 for both SMPF and MPF, see from paragraph 6.151 of the July 2013 Consultation for an explanation of this.

<sup>346</sup> See from paragraph 7.28 (on evoTAM proposals) above for an explanation of why we propose to exclude recovery of evoTAM costs from the SMPF charge.

<sup>347</sup> See from paragraph 7.22 (on TAM costs) above for a discussion of TAMs costs.

<sup>348</sup> See for example from paragraph 5.14 of the *Charge controls for Wholesale Line Rental and related services - Statement and consultation*, Ofcom, 7 December 2009, <http://stakeholders.ofcom.org.uk/binaries/consultations/wlr/summary/wlrcondoc.pdf>

**Table 7.5: WLR minus MPF differential, using service level LRIC:FAC ratios**

<i>£ per line per year, 2016/17, nominal prices</i>	FAC	LRIC:FAC ratio	LRIC
MPF	90.93	54%	49.10
WLR	88.63	55%	48.75
WLR-MPF	-2.30	n/a	-0.35

Source: Ofcom and BT's 2010 RFS and 2011 RFS for the LRIC: FAC ratios

7.71 Consistent with the approach described above for the WLR+SMPF minus MPF cost differential, we have also estimated the WLR minus MPF cost differential using a component level approach. This is more challenging for WLR compared to MPF, because there are more differences between the underlying services. In addition to the three main differences between WLR+SMPF and MPF (ie the PSTN line card, TAMs and Service Levels), for the MPF and WLR comparison there are differences relating to:

7.71.1 fault levels, as WLR is associated with lower fault levels than MPF (as explained in Section 5); and

7.71.2 usage of the frame, as WLR involves one jumper on the frame, compared to two jumpers for MPF.<sup>349</sup>

7.72 The table below show the results from our cost model for the differences between MPF and WLR.<sup>350</sup>

<sup>349</sup> This can be seen by comparing Figure A10.1 and Figure A10.3 in Annex 10 of the July 2013 Consultation.

<sup>350</sup> As with the equivalent table for the WLR+SMPF minus MPF differential we have included in the line card line the costs reallocated from caller display specifically to WLR, i.e. around 30p.

**Table 7.6: WLR minus MPF differential on a component basis in our Cost Model**

<i>£ per line per year, 2016/17, nominal prices</i>	WLR-MPF	Average	WLR-MPF
	FAC	LRIC:FAC	LRIC
Line cards (including reallocation of certain costs previously recovered from caller display)	10.65	70%	7.51
TAMs	-5.50	92%	-5.07
Service level and faults (including D-side and E-side copper current, drop wire maintenance and frame maintenance) <sup>351</sup>	-3.98	72%	-2.87
Local exchange general frames capital	-1.62	80%	-1.30
Service centre - assurance	-1.41	90%	-1.27
Other minor differences in cost components	-0.12	89%	-0.11
<b>Total</b>	<b>-1.98</b>	<b>n/a</b>	<b>-3.11</b>

Source: Ofcom

7.73 This component based analysis suggests that MPF costs around £2 more than WLR in terms of FAC, and around £3 more in terms of LRIC. For the same reasons as for the differential between WLR+SMPF and MPF, we have also considered making the following adjustments to this component level estimate of the differential:

- 7.73.1 increasing the LRIC to FAC ratio for line cards to 92%;
- 7.73.2 assuming that the difference between MPF and WLR for the “Service centre – assurance” costs is significantly less than currently projected in our model. Adjusting service centre assurance costs in the same way as we have adjusted other cost components affected by faults and Service Levels would result in MPF being around £0.35 above WLR; and
- 7.73.3 ignoring the other minor differences.

7.74 We also consider the impact of adjusting the LRIC to FAC ratio for the “local exchange general frames capital” cost component. In our final determination of the

<sup>351</sup> The frame maintenance costs are also higher for MPF because there is only a single jumper across the frame associated with WLR, whereas MPF includes two jumpers.

Single Jumpered MPF Dispute (the Dispute),<sup>352</sup> we reviewed the extent to which frame costs were expected to vary if only a single jumper were used to provide MPF instead of two as now. Because only one jumper is used to provide a WLR line, it is useful to compare our estimate of the potential savings in frame costs if MPF were provided using only a single jumper with the LRIC difference between MPF and WLR, part of which relates to differences in frame costs. However, the issue in the Dispute was whether provision of MPF using a single jumper would result in efficiency gains from the perspective of society as a whole, and the assumptions we made when modelling costs were appropriate to answering this question. For example, we assumed that CPs would not switch their existing MPF customers over to single jumpering, and so existing MPF lines would remain double jumpered. In addition, we did not set charges or address cost recovery issues – such as the recovery of sunk investments which would not vary when LLU CPs acquired a new exchange line customer. The circumstances of the Dispute and this review are therefore not the same in all respects.

- 7.75 In the Single Jumpered MPF Dispute we considered that it was unlikely that, on a forward-looking basis, frame capital costs would vary much with the number of jumpers used for MPF. For the purpose of the Dispute, we were interested in the implications for the forward looking cost of reducing the number of jumpers required for MPF (i.e. from 2 to 1) and the implications this might have for frames costs. The size of the increment considered was smaller than that assumed when BT calculates its LRIC estimates, when it considers the effect of ceasing all volumes associated with the component whose costs are being estimated. We found that the largest single element of frame capital costs in BT's cost data related to accommodation, which consists predominantly of payments to Telereal Trillium and facilities management costs. We considered it unlikely that, on a forward-looking basis, there would be material savings in accommodation costs as a result of reducing the number of jumpers used to provide MPF. We also considered it unlikely that there would be material savings in the costs of the ironwork, ladders or physical infrastructure of frames if the number of jumpers were reduced. In short, we considered that the incremental savings in frames capital costs due to only using a single jumper would be small.
- 7.76 We consider that this analysis is relevant in the context of the proposed charge controls to how we approach the LRIC differential between WLR and MPF for the "local exchange general frames capital" component. As in the Single Jumpered MPF Dispute, we are interested in how changes in the relative mix of WLR and MPF affects the number of jumpers and how this affects Openreach's frame capital costs from a forward looking long-run perspective. We are not interested in the cost savings from entirely stopping frames related activities, but are interested in relatively small changes in the use of the frame. We have therefore considered using a much lower LRIC to FAC ratio for "local exchange general frames capital" and propose to assume 10%, which is broadly consistent with our findings in the Single Jumpered MPF Dispute.<sup>353</sup>

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<sup>352</sup> Paragraphs 4.106 to 4.127, Ofcom, *Dispute between TalkTalk Group and BT Openreach about single jumpered MPF – Statement and determination*, 15 November 2013, [http://stakeholders.ofcom.org.uk/binaries/enforcement/competition-bulletins/open-cases/all-open-cases/cw\\_01019/determination.pdf](http://stakeholders.ofcom.org.uk/binaries/enforcement/competition-bulletins/open-cases/all-open-cases/cw_01019/determination.pdf)

<sup>353</sup> This is calculated such that the resulting frames capital differential on a LRIC basis is broadly equivalent to the annuitized cost of two frame blocks, given that the only incremental capital

7.77 Table 7.7 below shows the outcome of the WLR minus MPF cost differential if we make all the adjustments described above.

**Table 7.7: Adjusted component level calculation of WLR minus MPF LRIC differential**

<i>£ per line per year, 2016/17, nominal prices</i>	WLR- MPF	Average LRIC:FAC	WLR- MPF
	FAC		LRIC
Line cards (including reallocation of certain costs previously recovered from caller display)	10.65	92%	9.82
TAMs	-5.50	92%	-5.07
Service level and faults (including D-side and E-side copper current, drop wire maintenance and frame maintenance)	-3.98	72%	-2.87
Local exchange general frames capital	-1.62	10%	-0.16
Service centre - assurance	-0.35	90%	-0.32
<b>Total</b>	<b>-0.80</b>	<b>n/a</b>	<b>1.40</b>

Source: Ofcom

7.78 This analysis produces a LRIC differential with a different sign to the FAC differential. The FAC differential has MPF being around £0.80 more than WLR, whereas the LRIC differential has WLR being around £1.40 greater than MPF.

7.79 Because the comparison between WLR and MPF involves more factors than that for WLR+SMPF and MPF, we consider that there is an even greater degree of uncertainty for the WLR minus MPF differential. For the component level estimates, there is uncertainty over the FAC for each component, and also over the appropriate LRIC:FAC ratio for each component. There are also uncertainties with the service level estimates, especially over the appropriate LRIC:FAC ratios for each service (for the same reasons as when comparing WLR+SMPF with MPF).

7.80 On the balance of the available evidence presented above, and subject to stakeholder responses, our preliminary view is that the LRIC differential between WLR and MPF is likely to be in the range -£3 to £2 per line per annum. This is a

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expenditure we identified in the Single Jumpered MPF Dispute related to frame blocks. In this calculation, we have assumed [REDACTED].

wider range than for WLR+SMPF minus MPF, which we consider is consistent with the greater uncertainty of the WLR minus MPF differential.

- 7.81 For the purposes of the options discussed in the next Section where we consider setting charges so as to reflect the difference in LRIC by 2016/17, we have chosen to assume that WLR and MPF have the same LRIC, that is, that there is no LRIC differential between WLR and MPF. In doing this, we have attached less weight to the lower end of the range, as we consider it is likely to be appropriate to assume that the LRIC:FAC ratio for frame capital costs is low, reducing the likelihood of being at the very bottom of the range.<sup>354</sup>

**Question 7.4:** Do you agree with our approach and estimates of the likely ranges for the WLR/WLR+SMPF minus MPF differentials? Please provide reasoning for your answer.

## Base year data for charge control cost modelling

### Introduction

- 7.82 In the July 2013 Consultation we used BT's 2012 RFS to establish the base year cost data for the purposes of our Cost Model. Since publishing the July 2013 Consultation BT has published its 2013 RFS.<sup>355</sup> We have therefore considered the extent to which it would be appropriate to use the 2013 RFS for cost modelling purposes when finalising the Charge Control.
- 7.83 Some stakeholders<sup>356</sup> have made submissions to Ofcom both in response to our July 2013 Consultation and afterwards regarding BT's 2013 RFS and its suitability to be used to update the base year cost data. BT has changed some of the methodologies that it uses to prepare its RFS and the effect of these changes is material. We have therefore required BT to prepare a separate report setting out the reasons for and effect of these changes. BT published this report on 3 October 2013 (the October RFS Report).<sup>357</sup> Subsequently, BT has submitted a report prepared on its behalf by Deloitte, which seeks to appraise the changes in allocations between the 2012 RFS

<sup>354</sup> The LRIC for SMPF is the difference between the WLR+SMPF minus MPF differential and the WLR minus MPF differential. For the purposes of the option discussed in the next section where we consider setting charges so as to reflect the difference in LRIC by 2016/17, we have assumed a WLR+SMPF minus MPF differential of £2 and a WLR minus MPF differential of £0. This implies a LRIC for SMPF of £2. This compares to a top down estimate (based on a service level LRIC:FAC ratio) of £3.75.

<sup>355</sup> BT Group Regulatory Financial Statements 2013:

<https://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2013/index.htm>

<sup>356</sup> BT Group (section 5.1, pages 92-93) Openreach (section 3, pages 17-18), Sky (paragraphs 3.5-3.7, page 5), TalkTalk (paragraph 2.73, page 21) and Virgin Media (page 3). See:

<http://stakeholders.ofcom.org.uk/consultations/llu-wlr-cc-13/?showResponses=true>

<sup>357</sup> 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, BT, 3 October 2013

<https://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2013/ReportrequestedybyOfcomfortheyearended31March2013.pdf>

and the 2013 RFS (the Deloitte RFS report). BT has since published a non-confidential version of the Deloitte RFS report.<sup>358</sup>

- 7.84 For the purpose of the cost modelling used in this Consultation, we have continued to use the information contained in BT's 2012 RFS. As explained below, however, for the purposes of our final decisions on the proposed charge controls we intend to proceed by updating the base year cost data in our modelling by using the cost data in BT's 2013 RFS (where this is appropriate following further scrutiny)<sup>359</sup> but to use the allocation methodologies presented in BT's 2012 RFS (these are the allocation bases upon which we consulted in July 2013). We have informed BT of our proposal to proceed in this way and copies of the relevant correspondence between Ofcom and BT is in Annex 14.

### The base year for our cost model

- 7.85 In our July 2013 Consultation, we noted that BT would shortly be publishing its latest RFS, containing information for the year 2012/13, and that we would need to consider how best to take this information into account as part of our review. We said:

*"6.21 BT plans to publish its RFS for 2013 later this summer. We will therefore be able to take this information into account, alongside other information, in our cost estimates and it may be appropriate to use 2012/13 as the base year in our cost model. To the extent that changes in the 2012/13 RFS reflect changes in accounting methodologies (such as cost allocation rules) rather than changes in the underlying costs, we will need to consider if and how it is appropriate to reflect these changes in our base year costs and whether they justify a move away from the methodologies in this Consultation."*

- 7.86 In charge control reviews we seek to use the best available information to forecast BT's relevant costs over the charge control period. In practice, over the course of several different market reviews, we have used BT's most recently published RFS as a starting position, appropriately scrutinised and adjusted where necessary, as the basis of our assessment of BT's relevant costs. A key reason for this is that the RFS has typically formed a sensible check point for the consistent allocation of costs across different markets and services subject to *ex ante* review as well as to unregulated services. BT has asserted that we should only depart from the use of published RFS data in charge control models where scrutiny of the financial information raises clearly identified concerns with regulatory accounting principles, economic efficiency considerations and/or with other specific aspects relating to Ofcom's duties and responsibilities.
- 7.87 In the specific context of each charge control review, Ofcom is required to exercise its judgement, based on its experience and expertise to adopt an appropriate, proportionate and timely means to model BT's relevant costs in light of the specific

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<sup>358</sup> Independent review by Deloitte of BT RFS Attribution Methodology Changes, BT, 15 October 2013, published on 16 December 2013

<http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2013/IndependentreviewbyDeloitteofBTRFSAttributionMethodologyChanges.pdf>

<sup>359</sup> For example, as discussed in sections 3 and 4 above, we consider that the 2012 RFS costs associated with Openreach's quality of service in provisioning and fault repair are more representative than the 2013 RFS costs and will adjust the 2013 RFS costs accordingly.

circumstances applying at the time so as to address the competition concerns identified. Our duties require us to achieve an outcome which both furthers the interests of citizens in relation to communications matters and those of consumers in relevant markets, where appropriate by promoting competition. Any charge control remedy must be one that promotes efficiency, sustainable competition and be in the best interests of citizens and consumers as the end-users of those services. As explained in our July 2013 Consultation<sup>360</sup> (which is consistent with the approach taken in the March 2012 Statement)<sup>361</sup>, we have used the CCA FAC cost standard as a means to determine BT's efficient forward-looking costs for the purposes of setting LLU and WLR charge controls.<sup>362</sup> BT's RFS are compiled on a CCA FAC basis.

- 7.88 BT published its 2013 RFS on 31 July 2013. The 2013 RFS contained a number of material changes in allocation methodology when compared to the 2012 RFS and the basis for the July 2013 Consultation. As set out in our statement at the front of the 2013 RFS, Ofcom required BT to prepare and publish a further report describing certain changes in the allocation methodologies applied in the 2013 RFS, when compared to the 2012 RFS (the October RFS Report). BT published this report on 3 October 2013. As noted above, BT has separately provided Ofcom with a report prepared by Deloitte consisting of a review of the revised cost attribution methodologies used in the 2013 RFS. Having received the October RFS Report, together with more detailed data requested under our statutory information gathering powers, we have been able to form a clearer view of the aggregate effect of the changes in allocation methodology applied in the 2013 RFS.
- 7.89 Having regard to our objectives when setting charge controls and our duties set out above, and having reviewed the 2013 RFS alongside the October RFS Report and the Deloitte RFS Report, we have given careful consideration to whether it would be appropriate to use the information contained in the 2013 RFS to update the cost models used for the proposed charge controls. In other words, we have considered whether the 2013 RFS is the best source of data on which to base our forecast of BT's relevant costs in these markets and for these services.
- 7.90 Figure 7.1 below illustrates:
- 7.90.1 the effect of the changes (in terms of the scale and direction) which move costs from markets in which Ofcom set charge controls earlier this year (the leased lines charge controls in the AISBO and TISBO markets) into those we are proposing to set in the coming months; and
  - 7.90.2 the net impact of the remainder of the allocation changes, which shows that costs are overall moving into the markets where we are proposing to set charge controls as part of this review.

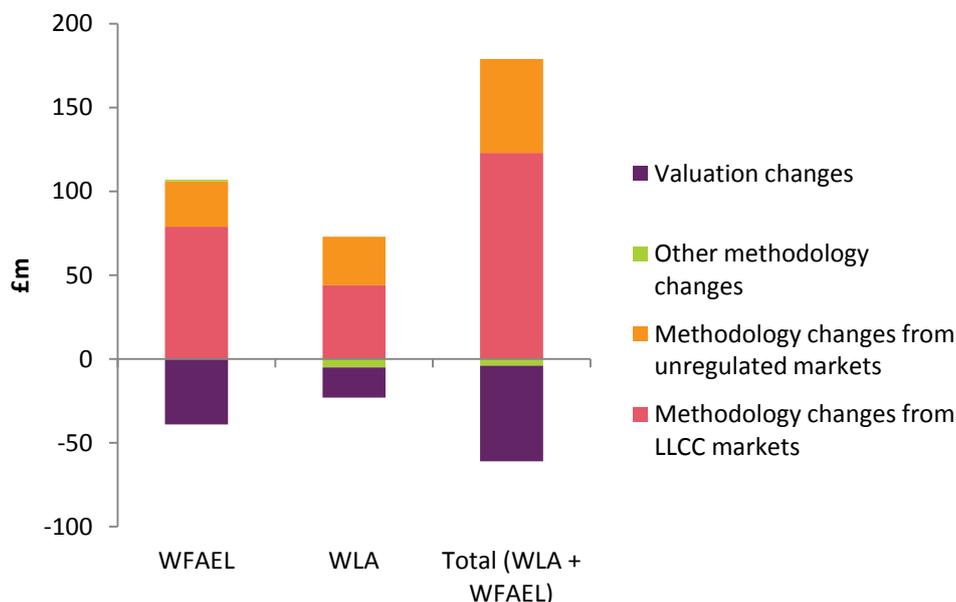
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<sup>360</sup> Paragraphs 3.23 – 3.26, July 2013 Consultation

<sup>361</sup> Paragraphs 3.4 – 3.21, March 2012 Statement

<sup>362</sup> We prefer to use CCA FAC as a substitute for LRIC+equiproportional mark up (EPMU) as it is the more practical option and given that there is little to choose between them on efficiency grounds. Both are generally consistent with basing charges on forward-looking costs and therefore, as explained above, usually give more appropriate signals for entry and investment than HCA.

**Figure 7.1 Illustrative impact of methodological changes: moving costs into and out of the WLA and WFAEL markets<sup>363</sup>**



7.91 As a general matter, it may be appropriate for BT to alter its cost allocation bases from time to time. However, where those changes are material and have significant implications for charge controls and competition across both regulated and unregulated services, they need to be carefully considered to ensure that they are objectively justified and balanced. Figure 7.1 illustrates that the predominant effect of the changes in allocation methodology implemented in the 2013 RFS would be to the benefit of BT if they were reflected in the charge controls we propose to set in 2014. For this reason, we have expressed our concern to BT regarding (i) the potential for material over-recovery from other regulated markets (this is at the core of our concerns) and (ii) the other material reallocations between the WLA and WFAEL markets and to those markets from unregulated services.

7.92 After careful consideration, our judgement is that it would not be appropriate to use the 2013 RFS as presented by BT for the purpose of the proposed Charge Controls. This is because of the effect of the material changes in allocation methodology that

<sup>363</sup> For each allocation change where costs to WLA and WFAEL markets increase and costs to AISBO or TISBO markets decrease, we have assumed that the allocation moves costs from LLCC markets to WLA and WFAEL markets. We have captured the total increase in WLA and WFAEL markets, although in some cases part of the cost is from LLCC markets and part is from elsewhere, including unregulated markets.

For each allocation change which is not assumed to move costs from LLCC markets to WFAEL and WLA markets, where costs for WLA and WFAEL have increased and costs allocated to unregulated markets have decreased, we have captured the total increase in WLA and WFAEL markets as methodology changes from unregulated markets.

The valuation changes relate to a CCA valuation of dropwire and CCA valuation of exchange power and specialised accommodation and plant. In the 2013 RFS there is also a revaluation of copper and duct. However, as we propose to use the RAV model in calculating 2016/17 prices for the purpose of these charge controls, the impact of copper and duct revaluations are excluded from the October RFS report and from the analysis above.

Figures based on the data presented on page 18 of BT's October RFS Report

have been applied in the 2013 RFS, when compared to the 2012 RFS. Our analysis of the effect of the methodological changes, as presented in the October RFS Report, indicates that using the 2013 RFS as presented would result in the significant over-recovery of costs for BT. This is because costs that have been included in other recently set charge controls (e.g. leased lines) are now being allocated to services within the scope of the proposed Charge Controls. The 2013 RFS also incorporates some re-allocations of costs between the markets covered by the proposed Charge Controls (e.g. between LLU and WLR services) and between these markets and unregulated markets.

- 7.93 It is therefore necessary to determine a suitable basis for forecasting BT's relevant costs. Two potential approaches that we have identified are: to use the 2013 RFS data but adjusted to remove the new allocation methodologies or to use the 2012 RFS data as we did in the July 2013 Consultation.
- 7.94 BT has submitted that in the event of the 2013 RFS (as presented) not being used as the starting point for the Charge Controls, Ofcom should make amendments to only correct for individual errors or to disapply specific methodological changes not considered to be 'superior' to those previously in use. In essence, this would involve an item-by-item assessment of each of the changes in allocation methodology applied in the 2013 RFS.
- 7.95 In our correspondence with BT we explained two concerns with such an approach:
- 7.95.1 first, concerns regarding the potential interdependence of the effects of the methodological changes and,
- 7.95.2 secondly, the broader question of whether the changes represent a balanced approach to the review of allocations.
- 7.96 Given these concerns, we would not be confident that applying and disapplying methodological changes on an item-by-item basis would produce a sufficiently accurate or suitable assessment of BT's relevant costs that could properly be used as the basis for the charge controls. Moreover, such an analysis would create the possibility of material delays in setting of the new charge controls. Such a regulatory lacuna would be undesirable given the competition concerns we have provisionally identified in the July 2013 FAMR Consultation.
- 7.97 Consequently, we do not consider that our duties (including those set out above) would be best achieved in the context of the current proposed Charge Controls by undertaking a detailed evaluation of these allocations. To do so would in our view lead to a material delay in the implementation of the revised controls, without necessarily producing a better outcome in terms of cost allocation.
- 7.98 In our judgement, an alternative approach of updating the base year information to take account of 2013 RFS costs (where appropriate), and retaining the 2012 RFS allocation methodologies would be most consistent with our statutory duties and in the circumstances of this case would provide the best information on BT's relevant costs. We are consulting on our proposal to proceed with this approach. Should we find that this approach is not feasible (for a currently unanticipated reason), we would need to consider reverting to using the 2012 RFS as the base year data for the Charge Controls.

**Question 7.5:** *Do you agree with our proposal to update the cost model base year information for the most recent 2013 RFS cost information (adjusted as proposed in this Consultation) while retaining the 2012 RFS allocation methodologies (as adjusted as set out in the July 2013 Consultation and this Consultation)? Please provide reasoning for your answer.*

## **Appropriateness of the inclusion certain costs within the base year data**

7.99 The process of BT creating and publishing its October RFS Report has provided greater clarity as to the constituent costs within the RFS. As a consequence, we are investigating a number of items further to establish whether, and if so to what extent, it would be appropriate to include or exclude them from the costs that are recovered through the Charge Controls. We set out these items below, and seek further information from stakeholders to ascertain whether there are any other specific costs that ought properly to be excluded, such that that we provide BT with the opportunity to recover only its efficiently-incurred forward looking costs relevant to the services in question.

### Provision for deafness claims

7.100 The October RFS Report has highlighted one area in particular, which BT has called “Specific Group Provision” and described as relating to claims for deafness arising from the use of copper line testing equipment previously used by engineers.<sup>364</sup> It was not previously clear to us that this was part of the costs within the 2012 RFS.

7.101 In the March 2012 Statement,<sup>365</sup> we stated that we did not consider it appropriate to recover these costs (then described as “employers liability for health and safety”) through the charge controls. The provision had been made to cover BT’s liability for deafness claims arising from the past use by engineers of certain BT line testing equipment. We rejected its inclusion in the cost base because it did not constitute a forward-looking cost, and therefore would not constitute an efficiently incurred forward looking cost for the purposes of the services on which we imposed charge controls.

7.102 We are investigating further the amount of these costs that BT has attributed to the WLA and WFAEL markets and propose to remove them from the base year costs when setting the final controls. We do not currently have sufficient data to remove these costs for the purposes of this consultation. However, subject to further review, we think that the total costs allocated to the WLA and WFAEL markets combined could be around £20m in 2012/13.<sup>366</sup> Reducing the costs recovered through the Charge Controls by c.£20m would amount to around 80p per line in nominal terms, assuming these costs were allocated to WLR and MPF rentals.<sup>367</sup>

**Question 7.6:** *Do you agree that BT’s provision for claims for deafness arising from the use of copper line testing equipment used in the past by engineers should be*

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<sup>364</sup> Page 28 of the October RFS Report

<sup>365</sup> Paragraph A10.16 of the March 2012 Statement.

<sup>366</sup> This estimate is based on the 2010/11 provision of £40m for total Openreach less £20m allocated to services outside of WLA and WFAEL in 2012/13 based on page 18 of the October RFS Report.

<sup>367</sup> This assumes that the c.£20m costs were spread equally per WLR and MPF line (in 2011/12) such that removing them would result in an equal per-line reduction.

*excluded from the cost base of the Charge Controls? Please provide reasoning for your answer*

### Career Transition Centre costs

- 7.103 Another item we are considering is called “Career Transition Centre” costs. In BT’s organisation, employees can be redeployed from one Line of Business (LoB) to another. A situation may occur in which an employee has left one LoB and has not yet started a role in another LoB or has not yet been made redundant. During this period the individual is allocated to the Career Transition Centre (CTC). BT sets out its treatment of costs relating its CTC on page 29 of the October RFS Report.
- 7.104 In the March 2012 Statement, we noted that the costs of the CTC relate to salary, national insurance, benefits and overtime allowance, bonus and pension costs.<sup>368</sup> Prior to the 2012/13 change to the allocation methodology, these costs were attributed to the original line of business in which the employee was based, prior to being moved into the CTC. BT confirmed that the costs for Openreach employees within the CTC in 2009/10 were £0.4m. This would be around 2p per line if allocated to WLR and MPF lines.
- 7.105 In the March 2012 Statement we included the costs of the CTC in the cost model as it had minimal impact on charges.
- 7.106 We are seeking further information from BT to establish the proportion of CTC costs which it considers should be allocated to WLA and WFAEL markets in 2011/12 and 2012/13 (using the 2011/12 allocation).
- 7.107 We are considering whether, and if so, to what extent these costs are appropriate to recover within the Charge Controls.

**Question 7.7:** *Do you consider that BT’s CTC costs should be included in the cost base of the Charge Controls? Please provide reasoning for your answer.*

### Testing the base year costs

- 7.108 As part of our process of finalising the cost base for the purposes of charge control modelling for the statement, we will continue to assess these two areas above. We will also review whether there are any other costs that should be excluded from the cost model – particularly costs that were excluded in previous LLU and WLR charge controls.
- 7.109 We invite stakeholders to highlight any other specific areas in which they have evidence to suggest that costs should be excluded on the basis that they do not constitute efficiently-incurred forward-looking costs relating to the provision of regulated LLU and WLR services.

**Question 7.8:** *Are you aware of any other specific BT RFS cost items which merit further investigation by Ofcom to establish whether they properly constitute efficiently incurred forward looking costs? Please provide reasoning for your answer.*

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<sup>368</sup> Paragraph A4.170 of the March 2012 Statement.

## 2012 RFS allocations

7.110 We have also published alongside this Consultation a report prepared by Analysys Mason looking at BT's 2012 RFS allocations. This report was commissioned by Ofcom and makes a number of recommendations to Ofcom for areas to investigate further. These include service level cost differentials, fault rates, DSLAM capital/maintenance and broadband line testing. We set out our further work on these and our proposed approach in Sections 4, 5 and 7 of this consultation, respectively.

7.111 There are three further recommendations:

7.111.1 *"We note that the method used to allocate duct costs between products within the review (WLR and LLU) and other products is potentially inaccurate, as it mixes a survey-based approach (measuring the cross-sectional area used) with one based on spend on duct construction since that date. Ofcom may wish to consider whether an update to BT's original 1996/7 survey of duct usage is needed."*

This duct survey is some years old now. However, we do not consider this is a cause for concern in relation to setting these charge controls. This is because, as set out in the July 2013 Consultation, we are modelling a copper only network. This means that for pre-existing duct, our modelling approach is agnostic between the different usage by copper and fibre. Our view is that the common cost contribution for substitutable inputs should be the same. To the extent that any new duct is being built solely for fibre, this would be considered an incremental cost and should not be allocated to the copper only services. We set out in our July 2013 Consultation our approach to removing incremental fibre costs.<sup>369</sup>

7.111.2 *"...Ofcom investigate further the allocation of local exchanges general frames capital and current between WLR, MPF and ISDN2 products."*

We do not intend to investigate this matter further, given its limited impact on the proposed Charge Controls.<sup>370</sup>

7.111.3 *"...Ofcom may also wish to consider [as part of its fault rate analysis] how D side copper current costs are allocated to other products, such as ISDN2, ISDN30 and PPCs"*.

We have focussed our service level cost differential analysis on the more significant issue of assessing the appropriate allocation of costs between rental services at Service Level 1 and Service Level 2.

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<sup>369</sup> Paras 6.61-6.74, Section 6 – Charge Control Cost Modelling in the subsection entitled Using the model to forecast a copper only network

<sup>370</sup> We have estimated the impact on a per line basis and consider it immaterial. For example, we have approximately calculated that the impact on a WLR line would be of the order of a few pence per annum.

## Section 8

# Proposed Charge Controls

## Introduction

8.1 In this Section we cover our proposed approach to adjusting charges for the main rental services to reflect the LRIC differential between them. We then set out the proposed levels (base case and ranges) of the charge controls for the purposes of this consultation (from paragraph 8.79).

## Adjusting charges to reflect differences in LRIC

### Introduction and summary

- 8.2 This Section considers our proposals in relation to setting the charge controls such that the differentials between charges for WLR/WLR+SMPF and MPF are equal to LRIC, and the speed at which we move to this.
- 8.3 We propose to maintain the policy position that for these markets the relative charges of WLR+SMPF and MPF should ultimately reflect the difference in the respective LRICs. However, having undertaken further work to understand elements of BT's cost base and the likely range of the LRIC differential, we consider that there is a case for extending the period (or 'glide path') over which the charges will converge on the LRIC differentials to beyond the end of the next charge control period. The differential in the respective wholesale charges is, at present, £19. We estimate that the underlying differential in the LRICs is in the order of £0 to £4. For the reasons set out below, we propose to set a glide path that will reduce the differential in the regulated charges from £19 to £10 by the end of the next charge control period (2016/17).
- 8.4 The alternative approach would be for charges to move to the LRIC differential by 2016/17. However, as we explain below, we are concerned that such an approach would risk undermining the stability and predictability of the regulatory regime contrary to regulatory certainty and have the potential to significantly reduce or undermine the profitability of investments made in these markets to the detriment of future investment, innovation and competition.
- 8.5 We are particularly interested in receiving responses from stakeholders providing information on these issues.

### Proposals in July 2013 Consultation

8.6 In the July 2013 Consultation, we proposed that common costs be recovered equally from MPF and WLR lines, with SMPF making no contribution to common cost recovery.<sup>371</sup> We explained that this would enable the difference in charges between WLR and MPF and the difference between WLR+SMPF and MPF to both be equal to the respective differences in long run incremental costs (LRICs).

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<sup>371</sup> See paragraphs 3.63 to 3.81 of [http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/summary/LLU\\_WLR\\_CC\\_2014.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/summary/LLU_WLR_CC_2014.pdf)

- 8.7 We proposed to use glide paths to bring charges into line with projected costs by the end of the control period, rather than using one-off charge changes at the start of the period.<sup>372</sup> We proposed to make an exception for directory-related costs for WLR, which we proposed to remove through a one-off adjustment in 2014/15.

### Stakeholder responses to the July 2013 Consultation

- 8.8 TalkTalk<sup>373</sup>, Sky<sup>374</sup> and Frontier Economics<sup>375</sup> (on behalf of TalkTalk and Sky) disagreed with setting the charge differentials between WLR/WLR+SMPF and MPF equal to LRIC.
- 8.9 They considered that, in proposing to set the charge differential equal to the LRIC differential, Ofcom had placed most, if not all, weight on productive efficiency. They considered that there were potential allocative efficiency gains and dynamic efficiency gains from setting the charge differential greater than LRIC. They considered that the allocative and dynamic efficiency considerations were important, and that placing some weight on them meant that the efficient charge differentials would be greater than the LRIC differential.
- 8.10 They considered that there would be allocative efficiency gains from a higher differential because it was likely that WLR by itself faces more inelastic demand than WLR+SMPF and MPF. Frontier Economics put this point as follows:

*“There is circumstantial evidence that the elasticity for voice-only services is relatively low. For example, there is a very limited number of households who do not take any voice service (either fixed or mobile) while the elasticity for broadband services is likely to be higher, given that penetration is significantly lower (indicating that customers are still making an active consumption decision based to some degree on price). Thus, an increase in WLR prices may not lead to a large percentage reduction in demand for voice services (although there could be substitution to lower cost mobile services) while a similar increase in MPF or SMPF prices could lead to a bigger percentage reduction in broadband penetration.”*<sup>376</sup>

- 8.11 Frontier Economics also considered that there were dynamic efficiency gains from a higher charge differential, because MPF was a deeper form of competition than WLR+SMPF. Frontier Economics said:

*“In the context of regulating LLU and WLR services, dynamic considerations are particularly important for two reasons.*

- *First, Ofcom recognises that, all other factors being equal, consumers will benefit from policies which enable competition further upstream in the value*

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<sup>372</sup> See paragraphs 3.139 to 3.154, [http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/summary/LLU\\_WLR\\_CC\\_2014.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/summary/LLU_WLR_CC_2014.pdf)

<sup>373</sup> [http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/TalkTalk\\_Group.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/TalkTalk_Group.pdf)

<sup>374</sup> <http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Sky.pdf>

<sup>375</sup> [http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Sky\\_and\\_TalkTalk\\_Group\\_Frontier\\_Economics\\_report.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Sky_and_TalkTalk_Group_Frontier_Economics_report.pdf)

<sup>376</sup> Paragraph 3.21, Frontier Economics, *Ofcom's LLU and WLR Charge Control Proposals, A report prepared for Sky and TalkTalk*, October 2013,

[http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Sky\\_and\\_TalkTalk\\_Group\\_Frontier\\_Economics\\_report.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Sky_and_TalkTalk_Group_Frontier_Economics_report.pdf)

*chain such as MPF. These benefits will remain important as some consumers migrate to NGA services.*

- *Second, Ofcom notes that dynamic competition in the CGA segment of the broadband market is central to its regulation of NGA”<sup>377</sup>*

- 8.12 TalkTalk and Sky also argued<sup>378</sup> that that the harm of setting the charge differential lower than the LRIC differential was greater than the harm of setting differentials above LRIC. Therefore, they said, it would be more appropriate to ‘aim up’, and select LRIC estimates at the upper end of the plausible range.
- 8.13 Sky argued<sup>379</sup> that the scope for productive efficiency would be “tempered” because BT has less incentive to minimise costs for the MPF service, as it does not consume it.
- 8.14 Sky also had a number of concerns with the implementation of setting the charge differences equal to LRIC differences. Amongst other things, Sky was concerned about the LRIC:FAC ratios used in the July 2013 Consultation, and the level of the service assurance cost. We have considered these concerns elsewhere in this consultation. In particular see paragraph 7.61 above regarding service assurance costs.
- 8.15 Sky also thought that Ofcom’s proposed approach “*reduced the differentials too quickly thus undermining the principle of regulatory certainty*”. It said the “*proposed reductions in price differentials are greater than MPF operators could have reasonably expected*”.<sup>380</sup>
- 8.16 TalkTalk did not comment on the appropriate speed of adjustment of the main rental charges to reflect LRIC differentials, but thought that a two year glide path was appropriate for directory costs.
- 8.17 EE agreed with Ofcom’s proposals to recover the same common cost from WLR/WLR+SMPF and MPF. On behalf of EE, Paul Reynolds of CEG Europe considered the proposed use of glide paths. CEG considered the case for the use of a glide path in relation to:
- TAMs,

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<sup>377</sup> Paragraph 3.23, Frontier Economics, *Ofcom’s LLU and WLR Charge Control Proposals, A report prepared for Sky and TalkTalk*, October 2013

<sup>378</sup> Paragraph 2.8 of *TalkTalk’s Approach to setting LLU and WLR Charge Controls consultation response*,

[http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/TalkTalk\\_Group.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/TalkTalk_Group.pdf)

Paragraphs 4.9 to 4.11 of *Sky’s Response to Ofcom’s Fixed access market reviews: Approach to setting LLU and WLR Charge Controls Consultation*,

<http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Sky.pdf>

<sup>379</sup> Paragraphs 4.20 of 4.23 of *Sky’s Response to Ofcom’s Fixed access market reviews: Approach to setting LLU and WLR Charge Controls Consultation*,

<http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Sky.pdf>

<sup>380</sup> <http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Sky.pdf>, paragraphs 1.3 and 4.30.

Redacted for publication [X<]

- line length,
- directories, and
- MPF and SMPF bulk migration charges.<sup>381</sup>

8.18 CEG considered that in general dynamic efficiency would be undermined to the extent that firms face charges that do not reflect costs:

*“Competition is desirable as an important means of promoting overall welfare. However, it is competition on the merits that fulfils this role and that requires firms to compete based on their respective capabilities. In this regard, the promotion of sustainable competition will be promoted by regulation that is neutral as between different firms and technologies. In particular, this can enable customers to shift demand to the firms that provide the offers that deliver the greatest value for the costs involved and thereby to deliver higher overall welfare. [...]*

*Regulation that leads to price differentials between services that do not reflect cost differentials is not technologically neutral and will undermine the extent to which competition raises welfare. [...]*<sup>382</sup>

8.19 CEG noted that Ofcom had said in the July 2013 Consultation that the main benefit of a glide path approach was that it gives greater incentives for efficiency improvement as it allows the firm to retain the benefits of cost reductions made under a previous charge control for longer. However, CEG considered that this benefit was not relevant to every pricing issue. It said:

*“For example, it is not relevant where an item has been wrongly included in a regulated cost stack (such as the inclusion of directory costs in the WLR cost stack). Indeed, by forcing BT’s competitors to help fund the cost of a service that BT would provide anyway, the current approach to directory costs may weaken BT’s incentives to minimise its costs in supplying directories. Incentives for cost innovation are also not relevant to removing distortions to the allocations of costs between MPF and WLR+SMPF services as the overall ability of the regulated firm to retain the benefits of cost reductions under the charge control will remain unchanged.”*<sup>383</sup>

8.20 CEG argued that Ofcom had recognised this for directories, but that it was unclear why it had not applied the same reasoning to the adjustments for TAMs, line length and for the treatment of bulk migrations.<sup>384</sup>

8.21 For TAMs, CEG noted that Ofcom set charges in 2009 on a path to move them to CCA FAC over a four year period. It therefore considered that “CPs were made aware in 2009 of Ofcom’s intention to align charges with the LRIC differential (or a proxy of it) by 2012/13”. CEG considered that an immediate adjustment would be appropriate for both TAMs and line length.<sup>385</sup> EE also argued that the charges for

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<sup>381</sup> Paul Reynolds, CEG Europe, *Assessing the glide path for the removal of pricing distortions, Memorandum to EE*, 4 September 2013, [http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/EE\\_-\\_Annex\\_A.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/EE_-_Annex_A.pdf)

<sup>382</sup> Paragraphs 13 and 14 of CEG Memorandum to EE.

<sup>383</sup> Paragraph 21 of CEG Memorandum to EE.

<sup>384</sup> Paragraph 23 of CEG Memorandum to EE.

<sup>385</sup> Paragraphs 29 to 33 and 34 and 35 of CEG Memorandum to EE.

bulk migrations should be adjusted by means of a one-off adjustment rather than a glide path. We have not addressed the arguments relating to bulk migrations in this consultation but will address them in our statement.

- 8.22 Openreach supported Ofcom's approach "*whereby the same or similar share of common costs is recovered from an MPF line as from a WLR+SMPF line and that SMPF should be treated, for cost purposes, as an overlay service.*"<sup>386</sup> BT Group was generally supportive of our proposal to use glide paths, agreeing that it leads to a stable and predictable regime and maintains efficiency incentives for cost reduction.<sup>387</sup> However, Openreach argued that Ofcom should [X]<sup>388</sup>
- 8.23 Verizon agreed with Ofcom's proposal to utilise LRIC:FAC ratios to estimate the LRIC for the relevant services.<sup>389</sup> But it argued it would best promote efficiency to have a one off adjustment to MPF, WLR and SMPF rental service charges rather than achieve this via a glide path.
- 8.24 Vodafone thought that having "*the same allocation*" of common costs to MPF and WLR units was likely to be the best way to achieve a "*methodology that would not require re-allocation of common costs if the balance of usage of services changed over time*".
- 8.25 [X] argued that charges for products in SMP markets should usually be set at, or close to, LRIC and that where possible common costs should be recovered from non-SMP products. However, [X] concurred with Ofcom that "*only an even recovery across LLU and WLR is proportionate*", to prevent competitive distortions or cross-subsidy from one product to another.<sup>390</sup>
- 8.26 Virgin Media agreed that the differential between MPF and WLR+SMPF should be equal to LRIC, noting that this was appropriate to ensure a level playing field in a fully mature market.<sup>391</sup>
- 8.27 Virgin Media, Vodafone and [X] agreed with Ofcom's proposal to use glide paths rather than one-off adjustments.
- 8.28 The Federation of Communication Services (FCS) agreed with Ofcom's proposal that the contribution to common costs should be "*the same for each wholesale access line service by the end of the control period.*"<sup>392</sup>

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<sup>386</sup> Paragraphs 73 and 74 of Openreach's response, *Fixed access market reviews: Approach to setting LLU and WLR charge controls*, 30 September 2013,

<http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Openreach.pdf>

<sup>387</sup> Paragraph 222 to 223 of Openreach's response summarises BT Group's view on glidepaths.

<sup>388</sup> [X]

<sup>389</sup> See paragraph 50 of Verizon Enterprise Solutions, *Response to Ofcom's Fixed Access Market Review: Approach to setting LLU & WLR Charge Controls consultation*, September 2013,

<http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Verizon.pdf>

<sup>390</sup> [X].

<sup>391</sup> See answer to question 3.6 in Virgin Media's response to Ofcom's Consultation on the Approach to setting LLU and WLR Charge Controls, 30 September 2013.

[http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Virgin\\_Media.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Virgin_Media.pdf)

<sup>392</sup> See answer to question 3.6 in FCS response to Ofcom FAMR – Approach to setting LLU and WLR charge control, July 2013. [http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Federation\\_of\\_Communication\\_Services\\_Ltd.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Federation_of_Communication_Services_Ltd.pdf)

## Further analysis

- 8.29 We have undertaken further work to understand elements of BT's cost base and the likely range of the LRIC differential (which are covered in this consultation). As a result of that analysis, and our consideration of stakeholder responses on this issue, we have looked again at our policy of making the differential in charges equal to the LRIC differential and the pace over which we consider that this should take place. For the reasons set out below, we consider that there is a case for extending the period (or 'glide path') over which charges will converge on the LRIC differentials to beyond the end of the next charge control period.
- 8.30 We consider first responses relating to whether we should ultimately set charge controls such that the differences between charges for WLR/WLR+SMPF and MPF reflect the differences in LRIC, and then turn to arguments relating to the speed of any adjustment.

### Setting the differential between the main rental charges such that they reflect the differences in LRIC

#### *Allocative efficiency and elasticity of voice only services*

- 8.31 There are significant economies of scale and scope in the local access network. There is therefore an important question over how to recover common costs in the most efficient way.
- 8.32 In considering the most efficient allocation of common costs, some respondents considered three aspects of efficiency:
- 8.32.1 'Productive efficiency', which means that the costs of production are minimised;
  - 8.32.2 'Allocative efficiency', which is achieved when charges are aligned to forward looking resource costs.<sup>393</sup> Allocative efficiency ensures that consumers who value a product at more than its cost are able to purchase it; and
  - 8.32.3 'Dynamic efficiency', which means that firms have the correct incentives to invest (e.g. in new infrastructure) and to innovate (e.g. to generate new products).
- 8.33 We consider that setting the charge difference between MPF and WLR/WLR+SMPF equal to the difference in LRIC will promote productive efficiency. This is because the MPF and WLR/WLR+SMPF wholesale products are alternative inputs for the same retail services - broadband and voice services sold to end consumers. Setting the charge differential to be equal to the LRIC differential should induce an efficient choice of wholesale inputs, and so help to minimise overall resource costs.
- 8.34 Sky, TalkTalk and Frontier Economics argued that setting the charge differential in this way gives weight to productive efficiency but ignores allocative efficiency and dynamic efficiency. We consider the arguments in relation to allocative efficiency first, and then turn to dynamic efficiency.

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<sup>393</sup> The relevant measure of cost is marginal or incremental cost. We expand on this point below.

- 8.35 Allocative efficiency is generally best promoted by charges in line with marginal (in practice incremental) costs. When there are common costs to be recovered, setting charges in line with marginal costs is not consistent with overall common cost recovery. To recover the common cost as efficiently as possible, more common costs should be recovered from products that have relatively inelastic demand (i.e. are not very responsive to increasing charges). Such an approach is often described as Ramsey pricing.
- 8.36 If WLR were related purely to voice services, and MPF were related purely to broadband services, and if voice and broadband services had very different elasticities, then in principle we would agree with Sky, TalkTalk and Frontier Economics that it would be possible to increase consumer welfare by recovering more common cost from one of the two services.
- 8.37 However, relating the wholesale products to the retail markets is not straightforward. WLR+SMPF is also used to provide broadband and voice services, and WLR is a necessary input in order to be able to buy broadband delivered through SMPF. Indeed, some customers may only take a fixed line (based on WLR) because they want high quality broadband internet access. Others may take a fixed line but recognise that this is giving them the opportunity to upgrade to broadband in future. It is therefore likely that some demand for WLR is derived from retail demand for broadband internet access.
- 8.38 More fundamentally, we do not consider that it is clear whether (a) voice or (b) voice and broadband has higher elasticity than the other, and whether there is any allocative inefficiency from setting the charge differential to be equal to the LRIC differential. We do not have the robust information needed on the elasticity of demand for voice and for voice plus broadband, and the interactions between the two, to determine how to adjust common cost recovery for greater allocative efficiency.
- 8.39 We do not consider that the responses by Sky, TalkTalk or Frontier Economics provide any evidence that the elasticity of voice is lower than for voice and broadband. For example, we do not consider that it follows from voice penetration being higher than fixed broadband penetration that voice only consumers have a lower elasticity. Lower broadband penetration might be driven by other factors, such as, for example, some older consumers being less interested in broadband.<sup>394</sup>
- 8.40 Sky also argued that *“The lower, but growing, level of broadband penetration at a time when retail prices remain low or are falling implies that, for some consumers, price affects their demand, whereas the higher and more stable levels of fixed voice penetration, despite steadily rising line rental prices, could indicate relative price inelasticity.”*<sup>395</sup> Even if it is case that fixed broadband prices have fallen over time<sup>396</sup>

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<sup>394</sup> Household penetration of fixed broadband was 72% in Q1 2013, compared to 84% for fixed voice. In terms of access to the internet (fixed or mobile), a lower proportion of older households have internet access. See Figure 5.51: Household penetration of key telecoms technologies and Figure 5.54: Home internet access, by age and socio-economic group, Ofcom, *Communications Market Report*, August 2013,

[http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr13/2013\\_UK\\_CMV.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr13/2013_UK_CMV.pdf)

<sup>395</sup> Paragraph 4.14, Sky’s response to the July 2013 Consultation,

<http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Sky.pdf>

while penetration has risen, this may not be due primarily to falling charges. Rather, the rise in broadband penetration may be due to broadband providing people with greater benefits over time, including, for example, greater broadband content such as IPTV, and supporting an increasing number of devices in the home. These additional benefits could make broadband less price elastic than voice. This may be especially the case if substitution to mobile were more relevant for voice only consumers than for voice and broadband consumers.

- 8.41 In any case, we consider that productive efficiency is likely to be a much more important consideration than allocative efficiency in the present context. This is because the large majority of consumers take both fixed voice and fixed broadband, and for these consumers only the productive efficiency considerations are relevant.<sup>397</sup> For this large majority of consumers, attempting to recover more common costs from one set of wholesale inputs over the other would tend to be undermined by switching at the retail and the wholesale level, as well as being productively inefficient.
- 8.42 We also note that MPF can be used for voice only consumers. So if charges were set such that WLR recovered significantly more common cost than MPF, it is possible that MPF would be used to serve voice only consumers. This would undermine the rationale for recovering more common cost from WLR, because it would be undermined by switching at the retail and wholesale level.
- 8.43 We therefore consider that even if it were possible to determine the relative elasticities and to optimise for both productive and allocative efficiency, the optimal charge differential is likely to be very close to the LRIC differential, with it being unclear whether it would be slightly less, slightly more or equal to the LRIC differential. Given the informational challenges of determining the elasticities, especially given the interactions between the wholesale products, we do not consider it is realistic to try to take account of these allocative considerations, and that there would be significant scope for error if we tried.
- 8.44 Our view, for the purposes of this consultation, is that in this case allocative efficiency considerations (related to Ramsey pricing) do not clearly point to setting a differential that differs from that implied by productive efficiency (that is, to a charge differential other than the LRIC differential). This is because the direction of any such adjustment from the LRIC differential is unclear, and because any such adjustment is likely to be small.

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<sup>396</sup> See Figure 5.50 in the 2013 Communications Market Report for average household spend on fixed internet and fixed voice over the period 2007 to 2012. At least over this period, household spend on fixed voice has fallen more than spend on fixed internet. However, this is likely to be driven in part by increases in the quality of fixed internet.

[http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr13/UK\\_5.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr13/UK_5.pdf)

<sup>397</sup> For example around 86% of households with a fixed line have both voice and broadband in Q1 2013. This can be seen in Figure 5.51 of Ofcom's *The Communications Market 2013*, August 2013, [http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr13/UK\\_5.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr13/UK_5.pdf) This shows that as 84% of households had a fixed line, and 72% of households had both broadband and voice, which implies that 86% of those with a fixed line have voice and broadband.

*The arguments for promoting MPF based competition*

- 8.45 We regard competition for voice and broadband services using both MPF and WLR/WLR+SMPF as being effective and valuable forms of competition that promote consumers' interests. We do not have a presumption that one of these two forms of competition is better than the other.
- 8.46 The two main competitors to BT at the retail level (i.e. TalkTalk and Sky) use MPF. We consider that the main users of MPF are now established, scale operators, following a number of years during which the differential between WLR/WLR+SMPF and MPF charges has been greater than the LRIC differential.<sup>398</sup> Both Sky and TalkTalk have continued to unbundle ever smaller exchanges, where the business case for doing so is likely to be increasingly marginal. If the business case of using MPF works for these small exchanges, we consider that it is likely to remain profitable for the large majority of the population covered by the MPF footprint, which involves larger exchanges and hence greater benefits from economies of scale. MPF also provides advantages in terms of product differentiation (e.g. call features and other aspects of the consumer usage experience) and allows CPs to avoid call origination charges levied by BT.
- 8.47 Given this, we do not consider that it is necessary or desirable to set charges to promote MPF-based competition over other forms of competition. On this basis charge differentials based on the absolute LRIC differentials will tend to promote efficient future investment choices. This would mean that charge differentials based on LRIC would provide a level playing field between competitors using different wholesale inputs, or 'competition on the merits' as EE puts it. We therefore consider that one relevant aspect of dynamic efficiency (i.e. promoting competition on the merits and efficient investments by different competitors) points to charge differentials equal to the absolute differences in LRICs.

*Incentives to reduce MPF costs*

- 8.48 We note Sky's argument that cost minimisation incentives on Openreach may be weaker for MPF. We note that this argument is only relevant to the differences between WLR/WLR+SMPF and MPF, as the large majority of the inputs going into these services are the same (e.g. copper and duct). In terms of the differences between WLR/WLR+SMPF and MPF, we are able to manage this risk by examining the reasons for the differences in costs. For example, we are investigating TAMs costs in detail, we have considered fault and service level costs in detail and have set out our analysis on other aspects of the differentials from paragraph 7.48 above.

*Aiming-up on the LRIC differential*


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<sup>398</sup> The charge differential is likely to have been greater than the LRIC differential since 2005, when BT voluntarily reduced the MPF charge from £105.09 to £80. This was then soon followed by a charge control set by Ofcom, see *Ofcom, Local loop unbundling: setting the fully unbundled rental charge ceiling and minor amendment to SMP conditions FA6 and FB6*, 30 November 2005, [http://stakeholders.ofcom.org.uk/binaries/consultations/llu/statement/llu\\_statement.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/llu/statement/llu_statement.pdf) LLU operators (using both MPF and SMPF) also benefited for a period from voluntary commitments by BT made in 2006 to maintain wholesale broadband charge floors: <http://stakeholders.ofcom.org.uk/binaries/telecoms/policy/bb/floors.pdf> Both Sky and TalkTalk have been active in LLU since 2005 or 2006.

- 8.49 As we do not have a presumption that MPF-based competition is better for consumers, we do not consider that if there is uncertainty over the precise level of the WLR/WLR+SMPF and MPF LRIC differential, it would be appropriate to 'aim up' and choose a differential near the top of the reasonable range. We recognise that it is difficult to estimate a precise figure for the differential with a high degree of confidence, but do not consider that this justifies the treatment suggested by Sky.

*Provisional views on the target for differential*

- 8.50 As set out in paragraph 8.46 above, we do not consider it is necessary or desirable to set charges to promote MPF-based competition over other forms of competition. This means that there would be advantages in setting a differential in charges between WLR+SMPF and MPF that reflected differences in LRIC.

- 8.51 We next consider the appropriate timeframe over which to make this adjustment.

Speed of adjustment to reflect LRIC differentials

*General preference for glide paths*

- 8.52 In setting charge controls, particularly where the controls replace similar existing controls (as is the case for the LLU and WLR charge controls), we have a strong preference for "glide paths", rather than one-off adjustments. 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.

- 8.53 We generally favour glide paths for two reasons:

8.53.1 **to provide stronger cost reduction incentives:** one of the features of price cap regulation is that profits may diverge from the level expected at the time when the control was set. Any such divergence may be taken into account when the cap (i.e. the level of X in CPI-X or RPI-X) is reset in the next charge control review. In principle, one way in which this could be done is by a one-off adjustment to charges, which would bring the firm's expected rate of return to a reasonable level (typically measured by the cost of capital) in the first year of the new control period. In contrast, with the glide path approach, the expected rate of return may only reach this level by the end of the charge control period. The glide path approach thus generally provides greater incentives for efficiency improvement as it allows the firm to retain the benefits of cost reductions made under a previous charge control for longer. One-off adjustments to charges reduce the effective regulatory lag, and hence the incentives to reduce costs; and

8.53.2 **to promote a stable and predictable regulatory regime:** the glide path approach avoids discontinuities in charges over time and leads to a more stable and predictable background against which investment and other decisions may be taken, by both suppliers and customers, in communications markets.

- 8.54 EE argues that it is possible to change the relativities of charges through one off adjustments without necessarily undermining the cost reduction incentives of glide paths. We largely agree with EE. Incentives for cost efficiency by the regulated firm are likely to be driven by the overall impact on profit earned by that regulated firm. Provided the overall impact on profit is not affected, the paths of charges for

particular services may not matter for providing cost reduction incentives for the regulated firm. Normally, one-off adjustments may be expected to reduce the overall revenue of the regulated firm in the first year of a charge control, which can reduce its incentive to reduce costs over time. However, if relative charges in the first year are adjusted such that total revenue (and hence profits) are unaffected by the one-off adjustments, then these one-off adjustments could be made without undermining cost reduction incentives.

- 8.55 In considering the relativities of charges, we therefore consider that the second argument for glide paths (i.e. to promote a stable and predictable regulatory regime) is more important. An important consideration in setting a stable and predictable regulatory regime is to consider what expectation stakeholders may have reasonably had based on past regulatory decisions.
- 8.56 In the March 2012 Statement, we signalled that we expected to continue to reduce the charge differentials to reflect the differences in LRIC.<sup>399</sup> However, we did not signal the timing of how quickly we would move to reflect the difference in LRIC.<sup>400</sup>
- 8.57 EE says it “*defies credibility to argue that it is necessary for a TAMs adjustment to continue in new charge controls commencing in 2014 because otherwise potential future investors in the UK telecoms sector will be deterred by Ofcom gaining a reputation as a wild and capricious regulator.*”<sup>401</sup> It argued for immediate adjustments which would lead to charges reflecting the LRIC differentials from 2014/15. However, while commenting more broadly, Sky asserted that Ofcom’s approach proposed in the July 2013 Consultation “*reduced the differentials too quickly thus undermining the principle of regulatory certainty*”. It said the “*proposed reductions in price differentials are greater than MPF operators could have reasonably expected*”.<sup>402</sup>
- 8.58 Given our clear preference for glide paths, we consider that it would be reasonable for stakeholders to expect Ofcom to gradually phase in the changes to MPF, WLR and SMPF charges to reflect the differences in LRIC. We therefore consider that large one-off adjustments to charges to reflect the LRIC differential would tend to undermine the perception of a stable and predictable regulatory regime contrary to regulatory certainty.
- 8.59 In the March 2012 Statement,<sup>403</sup> as well as signalling that we intended to reduce the difference in charges to reflect the difference in LRIC, we also provided our estimate

<sup>399</sup> Paragraph 7.65, *Charge control review for LLU and WLR services*, 7 March 2012,

<http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/statement/statementMarch12.pdf>

<sup>400</sup> Our earlier indications of the likely WLR+SMPF minus MPF LRIC differential were higher than those in the March 2012 Statement. In our 2009 LLU Statement we said that it was likely to be in the range of £20 to £25 per line per annum. In making this rough estimate we were most concerned with ensuring that the differential in charges we set (which was based on FAC) was above any reasonable estimate of the LRIC differential. See paragraphs A4.74 to A4.86, Ofcom, *A new pricing framework for Openreach - Statement*, 22 May 2009,

<http://stakeholders.ofcom.org.uk/consultations/openreachframework/>

<sup>401</sup> EE’s response to the July 2013 Consultation, page 10,

<http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/EE.pdf>

<sup>402</sup> <http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/Sky.pdf>,

paragraphs 1.3 and 4.30.

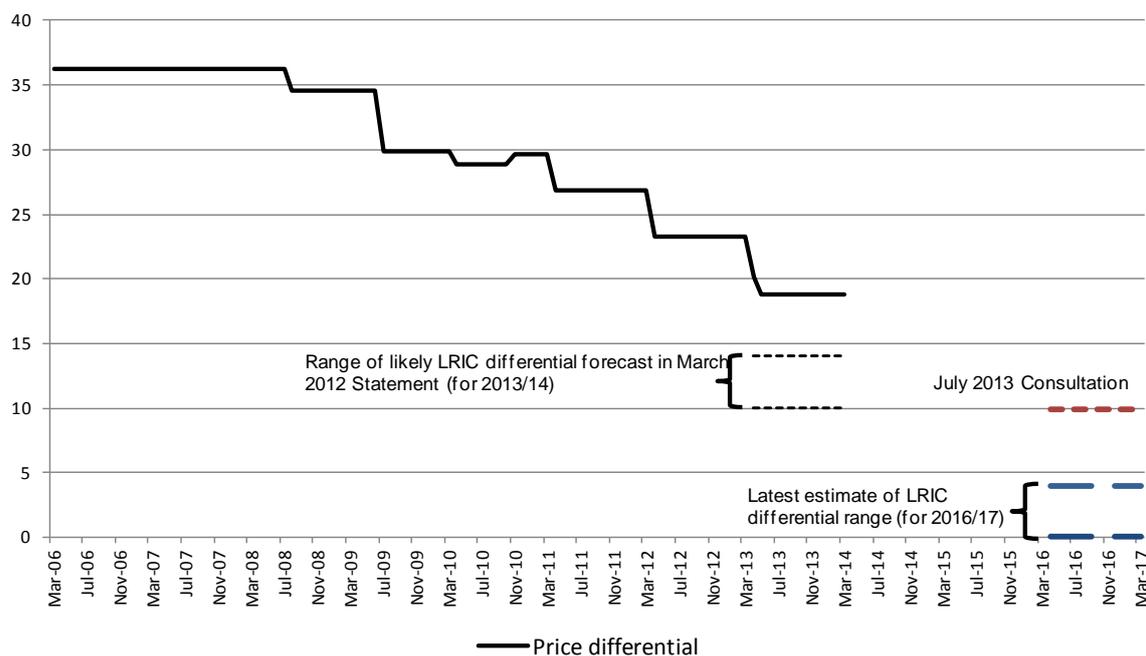
<sup>403</sup> We note that the range of £10 to £14 in the March 2012 Statement was made for 2013/14, whereas we are now forecasting the LRIC differential for 2016/17. We might expect it to be slightly lower in 2016/17 (in nominal terms), as generally we are forecasting efficiency gains to be greater

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at that time of the range for the LRIC differential between WLR+SMPF and MPF. This was £10 to £14 per line per annum, for 2013/14. This is considerably above our current estimate of the differential, which is £0 to £4 (as described paragraph 7.48 above).

8.60 Figure 8.1 below shows how the WLR+SMPF minus MPF charge differential has fallen over time, and also shows the estimates of the LRIC differential in the March 2012 Statement, the base case LRIC differential in the July 2013 Consultation and our current estimate.

**Figure 8.1: WLR+SMPF minus MPF charge differential over time (£ per line per annum)<sup>404</sup>**



Source: Ofcom

*Balancing different efficiency considerations*

8.61 There are a number of efficiency considerations that point in different directions in relation to the question of the pace of moving charges to reflect the LRIC differentials. We need to exercise our judgement to balance those considerations in setting charges in a way that best gives effect to our statutory duties and objectives.

8.62 We have set out our view above that there would be efficiency advantages from setting charges such that they reflect the differences in LRIC and that we do not

than input price increases. However, we consider this to be a small effect (not least since we are concerned with a difference in incremental costs, not the level of incremental costs itself), and it seems likely that CPs might have reasonably expected the differential to remain broadly constant in nominal terms.

<sup>404</sup>The price differential in this figure is in nominal (or outturn) prices.

consider it is necessary or desirable to set charges to favour MPF-based competition over other forms of competition. Rather, we consider that in principle charge differentials equal to LRIC differentials are likely to lead to efficient investment incentives and competition on the merits.

- 8.63 However, we consider that some aspects of dynamic efficiency point to a more gradual change, for the following reasons.
- 8.63.1 The differential between WLR+SMPF and MPF charges is currently £19. We signalled in the March 2012 Statement that we would set charges to reflect the LRIC differential, and provided an estimate of £10 to £14. Our revised estimate of this differential is £0 to £4. This is a much lower range than previously anticipated.
- 8.63.2 We are concerned that to reduce the differential from £19 to £0 to £4 in three years may undermine the stability and predictability of the regulatory regime contrary to regulatory certainty. On this basis, we are concerned that MPF operators will have continued to make investments in their networks and in unbundling new exchanges on the basis of the March 2012 Statement.<sup>405</sup> If our actions were to undermine the profitability of these investments, it could undermine regulatory certainty.
- 8.63.3 We consider that regulatory certainty is important to enable stakeholders to make informed investment decisions in the future, and to encourage them to make significant (and often sunk) investments. This is relevant to the markets we are considering for this review, and more generally to other markets affected by decisions made by Ofcom. We expect efficient investment and innovation to deliver benefits to consumers, including through increased competition.
- 8.63.4 In order to not undermine regulatory certainty we therefore consider that we should move more slowly in setting charges to reflect the LRIC differential.
- 8.64 Given these considerations, we have considered two main options for phasing in changes to the main rental charges:
- 8.64.1 a glide path such that the charge differential between WLR+SMPF and MPF is £10 by 2016/17. Because we now estimate the differential to be below the £10 to £14 range we reported in our March 2012 Statement, we consider that it may be more appropriate to go to the bottom of this range; and
- 8.64.2 a glide path such that the charge differential between WLR+SMPF and MPF is set to be a reasonable estimate of the LRIC differential by 2016/17. We consider this LRIC differential to be in the range of £0 to £4, and have used a mid point in this range of £2.

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<sup>405</sup> We consider the situation with the WLR, SMPF and MPF rental charges is quite different to that for the Caller Display charge (for which we do not propose to use a glide path). For Caller Display, we consider that it would promote efficiency to have a one-off adjustment in the charge and that there are no strong countervailing arguments. In particular, there is unlikely to have been any investment directly related to the Caller Display charge that was contingent on a particular level or structure of regulated charges, and we did not previously signal any future approach to the Caller Display charge.

- 8.65 Subject to responses received to this consultation, for the reasons set out above, we are proposing to proceed with the first option; that is to set charges such that the differential is £10 by 2016/17. In this regard we consider that it is appropriate to attach particular weight to ensuring a stable and predictable regulatory regime.

**Question 8.1:** *Do you agree with our proposal to set the main rental charges such that the differential in charges between WLR+SMPF and MPF is equal to £10 by 2016/17, rather than moving more rapidly to reflect our now lower estimate of the LRIC differential of £0 to £4? Please provide reasoning and information to support your response to this question.*

### **Possible one-off adjustments for costs that should not be included**

- 8.66 While we have a general preference for glide paths (as set out above), this does not mean that we rule out one-off adjustments in charges where there are good reasons to introduce them. For example, we might make one-off changes if there are strong allocative efficiency or competition arguments for bringing charges into line with cost before the end of the control period. However, in assessing possible one-off adjustments, we would need to balance this against alternative regulatory approaches. We also need to consider carefully what reasonable expectations of CPs might be, and the potential implications for future investment.
- 8.67 We consider that one potential justification for a one-off adjustment may be to remove costs that should not have been included in those charges. In the July 2013 Consultation, we proposed that the charge control on WLR should no longer include a contribution to the cost of providing printed telephone directories, and that this adjustment should be made on a one-off basis at the start of the next charge control period. In our forthcoming statement, we will review stakeholder responses on this issue, and set out our final conclusion on this point. For the purposes of this consultation we have proceeded with the approach to directory costs proposed in the July 2013 Consultation, that is, to remove the directory costs through a one-off reduction in the WLR charge.
- 8.68 We consider that the situation for directories is similar to that for:
- 8.68.1 removing evoTAMs costs from SMPF; and
  - 8.68.2 removing that part of DSLAM capital maintenance costs that should be allocated to Special Faults Investigations (SFIs).<sup>406</sup>
- 8.69 In all these cases – directories, evoTAMs and the SFI part of the DSLAM capital maintenance costs – we consider that these costs have been incorrectly allocated to regulated products in our charge control. We therefore consider there is a case for removing these costs as one off adjustments.
- 8.70 We do not consider that the importance of giving cost reduction incentives to Openreach is as important for these costs as it usually is when considering the path of charges over a charge control period. This is because we are not reducing costs due to an efficient reduction in, for example, evoTAM costs brought about by risky

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<sup>406</sup> See from paragraph 7.34 above for more detail on our approach to DSLAM capital maintenance.

investment or innovation, but rather we have proposed that it is not appropriate to recover evoTAMs costs from the charges within the scope of this charge control.

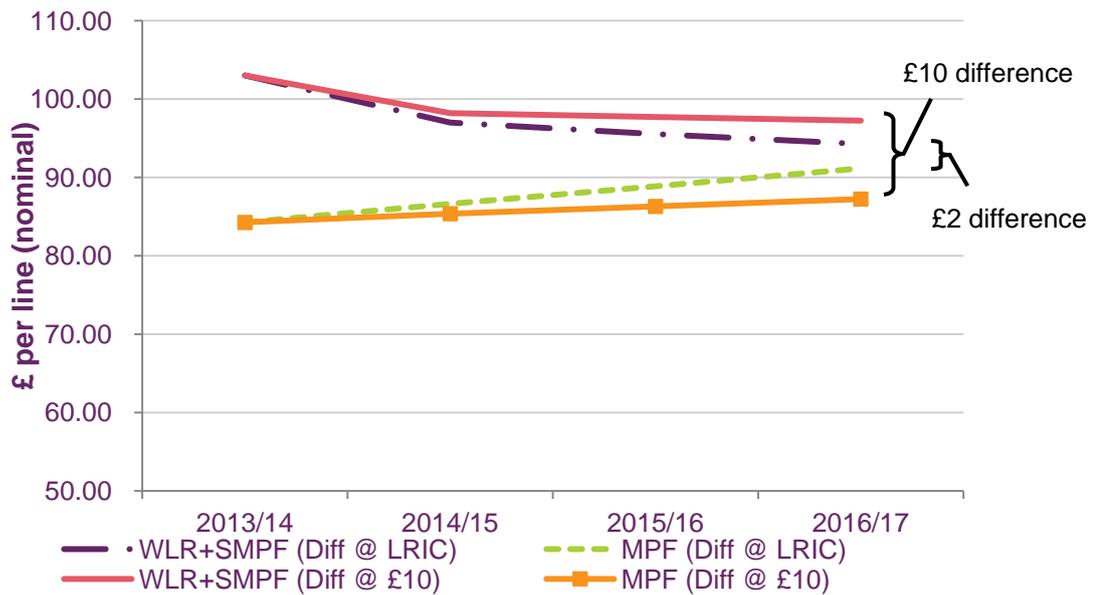
- 8.71 However, we recognise that removing the costs immediately leads to a more sudden change, and there is some tension between making these one off adjustments and promoting a stable and predictable regulatory regime, particularly given that we have been clear in the past about our strong preference for glide paths. However, for each of the costs in questions – directories, evoTAM costs in SMPF and DSLAM capital maintenance costs related to SFIs – we are not necessarily removing the opportunity to recover the costs in question, merely removing them from charge controlled services. For example, for evoTAMs, which are only used to support SMPF for BT's own downstream Wholesale Broadband Connect services, the costs could be recovered from non-charge controlled products.
- 8.72 We have considered the impact of the possible one-off adjustments given our proposals in relation to the differential between the main rental charges set out above, and the weight we propose to place on providing a stable and predictable regulatory regime. On balance, we consider that the implementation of these one off adjustments does not result in an unacceptably large adjustment which would undermine the stability and predictability of the regime. The differential in 2014/15 moves towards the upper end of the range we signalled in the March 2012 Statement, and we consider the size of the one-off reduction in the differential in 2014/15, and the movements in the individual charges, is not excessive.
- 8.73 While we consider that there is a case for one-off adjustments in relation to the specific costs set out above, we do not consider that it would be appropriate to go straight to the £10 differential by means of a one-off adjustment. We therefore, propose to use a glide path, apart from using one-off adjustments for the specific costs set out above (i.e. directories, evoTAMs and the SFI part of the DSLAM capital maintenance costs), for which we consider there is a stronger case for one-off adjustments.

**Question 8.2:** *Do you agree with our proposed approach to making one-off adjustments for the removal of evoTAMs costs and DSLAM capital maintenance costs? Please provide reasoning for your answer.*

### Implementation of preferred option

- 8.74 The paths for the three main rental charges for the two options are shown in Figure 8.2 below, and in Table 8.1.

**Figure 8.2: Paths for rental charges for two glide path options (£ per line per annum)<sup>407</sup>**



Source: Ofcom

<sup>407</sup> The price differential in this figure is in nominal (or outturn) prices.

**Table 8.1: Paths for rental charges for two glide path options (£ per line per annum)**

<i>£ per line per annum (nominal prices)</i>	2013/14	2014/15	2015/16	2016/17
<b>Option 1 - Differential of £10 by 2016/17 (base case)</b>				
MPF	84.26	85.30	86.15	87.01
WLR	93.27	90.69	90.35	90.01
SMPF	9.75	7.61	7.30	7.00
WLR+SMPF	103.02	98.29	97.64	97.01
<b>Option 2 - Glide path to LRIC differential by 2016/17</b>				
MPF	84.26	86.62	88.83	91.11
WLR	93.27	91.05	91.08	91.11
SMPF	9.75	5.01	3.17	2.00
WLR+SMPF	103.02	96.06	94.25	93.11

Source: Ofcom

- 8.75 We propose to set the differential in charges between WLR+SMPF and MPF to £10 in 2016/17 in such a way that the total revenue recovered from the three rental charges (i.e. WLR, MPF and SMPF) in 2016/17 is equal to our assessment of efficiently incurred FAC across the portfolio of regulated services in that year. This means the total revenue to Openreach under each of the two options for the glide path set out above would be the same in 2016/17.
- 8.76 There are a number of ways in which we could set the three rental charges such that the WLR+SMPF minus MPF differential is £10 by 2016/17. We propose to do this such that the differential in charges between WLR and MPF is £3 by 2016/17, in line with the bottom of the range we set out for that LRIC differential in the March 2012 Statement.<sup>408</sup>

## Proposed charge controls

- 8.77 Tables 8.2 and 8.3 below show the proposed X values for the charge controlled services. These are based on our proposal to set charges such that the difference between WLR+SMPF and MPF charges is £10 by 2016/17. For rental services, Tables 8.2 and 8.3 also show the impact of the one-off adjustments described in paragraph 8.74 above. In Table 8.7 below, we show the impact of the option of setting charges such that the difference between WLR+SMPF and MPF charges is £2 by 2016/17.

<sup>408</sup> See paragraph 7.31, *Charge control review for LLU and WLR services*, 7 March 2012, <http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/statement/statementMarch12.pdf>

**Table 8.2: Proposed LLU Charge Controls for 2014-17**

Basket/service	2011/12 <sup>409</sup> revenues (£m)	Current Charge 2013/14 (£)	Charge for 2014/15 base case (range) nominal (£)	Charge control for 2015/16 to 2016/17 base case (range)
MPF Rental	451	84.26	85.30 (82.78 to 88.81)	CPI -1.25% (CPI -4.25% to CPI +3%)
SMPF Rental	43	9.75	7.61 (7.57 to 7.63)	CPI-6.25% <sup>410</sup> (CPI-6.5% to CPI-6.0%)
MPF Single Migration	31	30.65	31.50 (30.55 to 32.65)	CPI+ 0.5% (CPI -2.5% to CPI +4.25%)
MPF Bulk Migration	15	28.42	26.23 (25.42 to 27.22)	CPI -10% (CPI -12.75% to CPI -6.5%)
SMPF Single Migration	8	30.65	31.50 (30.55 to 32.65)	CPI+ 0.5% (CPI -2.5% to CPI +4.25%)
SMPF Bulk Migration	2	28.42	26.23 (25.42 to 27.22)	CPI -10% (CPI - 12.75% to CPI - 6.5%)
SMPF New Provide	25	30.65	30.35 (29.41 to 31.49)	CPI -3.25% (CPI -6.25% to CPI +0.5%)
MPF New Provides basket	[REDACTED] [£55m- £65m]	45.53	44.11 (42.74 to 45.78)	CPI -1.75% (CPI -5% to CPI+2%)

<sup>409</sup> Source: External revenues as per BT RFS 2012, 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 2012-13 WLR/LLU Charge Control Compliance statement.

<sup>410</sup> In all sensitivities used to generate this table we have assumed that charges are set such that the difference in charges between WLR+SMPF and MPF is £10 and the difference between WLR and MPF is £3 in 2016/17. These constraints mean that SMPF is £7 in 2016/17 in both our high and low sensitivities. In all sensitivities, we have set the MPF and WLR charges such that the total forecast revenue from MPF, WLR and SMPF is equal to the forecast total cost. (In this table we nevertheless show a range for SMPF, because we have rounded up the high case and rounded down the low case).

Basket/service	2011/12 <sup>409</sup> revenues (£m)	Current Charge 2013/14 (£)	Charge for 2014/15 base case (range) nominal (£)	Charge control for 2015/16 to 2016/17 base case (range)
Hard Ceases basket	[X] [£15m- £25m]	Various	CPI -9.25% (CPI -11.75% to CPI - 6.75%)	CPI -9.25% (CPI -11.75% to CPI -6.75%)
Other LLU ancillaries basket	[X] [£50m- £110m]	Various	Various	CPI- 5% (CPI to -6% CPI +0%)
Co-Mingling New Provides and Rentals basket	[X] [£30m- £55m]	Various	Various	CPI+1.75% (CPI -1.00% to CPI+4.50%)
Tie Cables basket	28	54.15	50.70 (49.36 to 51.98)	CPI -8.5% (CPI -11% to CPI -6.25%)

Source: Ofcom (except where otherwise indicated)

**Table 8.3: Proposed WLR Charge Controls for 2014-17**

Service	2011/12 <sup>411</sup> revenues (£m)	Current charge 2013/14 (£)	Charge for 2014/15 base case (range) nominal (£)	Charge control for 2015/16 to 2016/17 base case (range)
WLR Rental	2,042	93.27	90.69 (88.11 to 94.29)	CPI -2.5% (CPI -5.5% to CPI+1.25%)
WLR Transfer	13	3.39	4.83 (4.69 to 4.97)	CPI+40.25% (CPI+36% to CPI+44.5%)
WLR Connections basket <sup>412</sup>	27	47.11	44.82 (43.47 to 46.41)	CPI -7.25% (CPI -10.00% to CPI -3.75%)
WLR+SMPF Simultaneous Connections <sup>413</sup>	N/A	77.76	62.93 (60.97 to 65.32)	CPI -21.25% (CPI - 23.75% to CPI - 18.25%)
WLR+SMPF Simultaneous Migration <sup>414</sup>	N/A	30.65	31.50 (30.55 to 32.65)	CPI +0.5% (CPI - 2.5% to CPI +4.25%)
WLR Conversion	N/A	30.65	31.50 (30.55 to 32.65)	CPI +0.5% (CPI - 2.5% to CPI +4.25%)
Caller Display	[REDACTED] c.25	6	0.35 – 0.5	0.35 - 0.5

Source: Ofcom (except where otherwise indicated)

<sup>411</sup> Source: Internal and External revenues as per BT RFS 2012, page 36; and BT's response to 11th s.135 to BT (revenue for Caller Display).

<sup>412</sup> 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%2B30URCuKygKmgSNUNelS4WkJBRh6z%2FRUAlt8maxtgrEro1A7%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".

<sup>413</sup> WLR+SMPF 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 (see Section 6 for more details).

<sup>414</sup> WLR+SMPF 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 (see Section 6 for more details).

**Table 8.4: Cumulative impact of modelling changes on rental charges (nominal 2016/17 (£))<sup>415</sup>**

	MPF rental	WLR rental	SMPF rental	WLR + SMPF
Base (July 2013 Consultation)	88.25	89.90	8.25	98.15
Simultaneous provide adjustment	88.27	89.92	8.25	98.17
DSLAM Reallocation	88.23	89.88	7.60	97.47
(Evo)TAM Change	89.25	89.96	4.32	94.28
Caller ID	89.44	90.47	4.32	94.79
Faults and service level	90.28	90.32	3.81	94.14
QoS adjustment	90.64	90.65	3.84	94.50
Other corrections	90.34	90.30	3.77	94.06
LRIC differential at £10	87.01	90.01	7.00	97.01
Base case this consultation	87.01	90.01	7.00	97.01

Source: Ofcom

- 8.78 Table 8.4 above shows the impact on the model outputs for rentals when we make the changes to the model discussed in this consultation. Table 8.4 shows charges, which are calculated after LRIC adjustments. This table is consistent with the data shown in Table 5.9 which shows the impact of our faults and service proposals. However this is shown on an FAC basis. The effect of showing charges, rather than FAC is to reduce the differential between WLR and LLU and also to reduce the SMPF impact in Table 8.4.
- 8.79 We have performed sensitivity analysis on the key assumptions used when forecasting costs for WLR, MPF and SMPF rental services. Table 8.5 below shows the estimated impact on target unit charges for MPF and WLR services. Even though the costs of SMPF change, the SMPF charge is unaffected in these sensitivities because of the way we propose to set charges to reach a target level for the differentials between WLR/WLR+SMPF and MPF.<sup>416</sup>

<sup>415</sup> Please note that adjusting the sequence of the changes would result in small changes to the absolute values of the impact of each of the individual changes.

<sup>416</sup> These sensitivities assume that we set charges such that the difference in charges between WLR+SMPF and MPF is £10 and the difference between WLR and MPF is £3 in 2016/17. These constraints mean that SMPF is £7 in both all sensitivities in 2016/17. In all sensitivities, we have set

**Table 8.5: Sensitivity analysis for Rental services (2016/17 impact on target charges in £ nominal terms)<sup>417</sup>**

	MPF Rental	WLR Rental
Efficiency 1% higher	-2.22	-2.22
Efficiency 1% lower	2.31	2.31
WACC 1% higher	3.03	3.03
WACC 1% lower	-3.03	-3.03
Input operating cost inflation 1% higher	1.83	1.83
Input operating cost 1% lower	-1.76	-1.76
Volumes High	0.12	0.12
Volumes Low	0.25	0.25
High QoS adjustment	0.38	0.38
High service level	-0.06	-0.06
TAM & EvoTAM high	10.23	10.23
TAM & EvoTAM low	-7.53	-7.53

Source: Ofcom

8.80 For the purposes of this consultation, we have also produced ranges for the values of the X for each service. The upper and lower bounds of the range are calculated for a:

8.80.1 'high' cost scenario comprising:

- Ofcom's low volume forecast;
- low efficiency forecast of 4%;
- a 1% increase in operating cost inflation;
- a high WACC of 9.8%;
- high QoS service adjustment value of 8.1%;

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the MPF and WLR charges such that the total forecast revenue from MPF, WLR and SMPF is equal to the forecast total cost.

<sup>417</sup> Please note that these sensitivities are applied to the new base case prices (i.e. after the differential between WLR+SMPF and MPF has been set at £10). For this reason, the direction and magnitude of the impact of some parameter changes will be different to that which we would observe if the sensitivity had been run on the underlying FAC for each service.

- o high Service Level 2 differential of 23% ; and
- o high TAM and EvoTAM costs; and

#### 8.80.2 'low' cost scenario comprising:

- o Ofcom's high volume forecast;
- o high efficiency forecast of 6%;
- o a 1% decrease in operating cost inflation;
- o a low WACC of 7.8%; and
- o low TAM and EvoTAM costs.

8.81 In Table 8.6 below, we show the proposed ranges of X for all services. The low and the high cases are calculated as described above. In Table 8.6 we also show the high and low scenarios for rental services when setting a glide path to the LRIC differential at £2.

**Table 8.6: Proposed ranges for Xs (based on high and low cases)**

Services	Ranges of X
WLR Rentals: Year 1	-1.25% to -7.75%
WLR Rentals: Years 2 & 3	1.25% to -5.5%
MPF Rentals Year 1	3.25% to -4%
MPF Rentals Years 2 & 3	3% to -4.25%
SMPF Rentals Year 1	-24% to -24.5%
SMPF Rentals Years 2 & 3	-6.5% to -6%
WLR Connections	-3.75% to -10%
WLR Transfers	44.5% to 36%
MPF New Provides	-1.75% to -8.5%
Hard Ceases Basket	-6.75% to -11.75%
MPF Single Migrations	4.25% to -2.5%
MPF Bulk Migrations	-6.5% to -12.75%
SMPF New Provides	0.5% to -6.25%
SMPF Single Migrations	4.25% to -2.5%
SMPF Bulk Migrations	-6.5% to -12.75%
WLR+SMPF Simultaneous migrations	4.25% to -2.5%

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WLR Conversions	4.25% to -2.5%
WLR+SMPF simultaneous connections	-18.25% to -23.75%
Other LLU ancillaries basket	-4% to -6%
Co-Mingling New Provides and Rentals basket	4.5% to -1%
Tie Cables basket	-6.25% to -11%

Source: Ofcom

**Table 8.7: Proposed ranges for X (based on high and low cases, when WLR+SMPF minus MPF differential is £2 by 2016/17)**

Services	Ranges of X
WLR Rentals: Year 1	-0.75% to -7.5%
WLR Rentals: Years 2 & 3	1.75% to -5.25%
MPF Rentals Year 1	4.75% to -2.5%
MPF Rentals Years 2 & 3	4.5% to -2.75%
SMPF Rentals Year 1	-50.75% to -51%
SMPF Rentals Years 2 & 3	-39.25% to -39%

Source: Ofcom

- 8.82 Ofcom expects shortly to issue a statement in response to the remittal directions from the Competition Appeal Tribunal of 29 April 2013 following the appeal of the current LLU and WLR charge control. It is likely that this statement will lead to a change to the current charges for MPF rental, SMPF rental and WLR rental. Given the proximity of this correction to the publication of this document we have not been able to reflect any changes in our cost model or in the numbers and 'Xs' presented in this consultation. For the final decision on the charge controls we will update the cost model to incorporate any changes to starting charges and make any consequential changes to the appropriate Xs.

## Section 9

# Implementation of our further proposals

9.1 In this Section, we explain how each of the proposals set out in this consultation would be implemented in terms of their inclusion within the legal instruments imposing SMP conditions on BT. This Section is structured as follows:

- first, we address those proposals relating to the proposed charge controls to be imposed on BT for LLU, WLR, ISDN2 and ISDN30 services (namely, proposed Conditions 7A and 7C to 7E).<sup>418</sup>
- secondly, we address the minimum service levels for provisioning and repair which we have proposed BT should meet for LLU and WLR services (namely, those which relate to proposed Condition 12).
- thirdly, we address our proposal to impose a new additional KPI requirement on BT which will enable us to monitor the number of repairs and provisions of new lines which take place outside the SLA period (i.e. the ‘tail’).

9.2 At the end of each part, we also explain why we consider that:

- the revised text of the proposed Conditions and directions, which are set out in the schedules to the statutory notifications included at Parts I and II of Annex 15 to this consultation, satisfy the legal tests set out in the Act; and
- in considering the proposals set out in this consultation, we have complied with our applicable duties.

## Charge control proposals

### Implementation

9.3 In Section 8 of the July 2013 Consultation, we explained how the proposed charge controls for LLU services and WLR services would work alongside the SMP conditions proposed in the July 2013 FAMR Consultation to address the competition concerns arising in the WLA and WFAEL markets in which we propose that BT has SMP. We explained how Conditions 7A and 7C were structured and how they will work in practice. In particular, we discussed the following:

- how the proposed Conditions would work alongside other regulation;
- the effects of the proposed Conditions and the structure of the “baskets” of services;
- how we calculate whether Openreach is complying with the charge ceilings created by the CPI-X controls, including:

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<sup>418</sup> The majority of our proposals in this consultation concern the LLU and WLR charge controls. However, as referenced in Section 2 of this consultation, some of the changes we are proposing to the LLU and WLR charge controls are also relevant to the ISDN30 and ISDN2 charge controls.

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- how we will determine the overall change in Charge Controls for each service or group of services; and
  - the information we will require from Openreach to enable us to monitor compliance with the charge controls; and
  - how the Conditions allow for corrections where there has been over- or under-recovery.
- 9.4 Further, at paragraphs 15.40 - 15.64 and 15.108 - 15.124 of the July 2013 FAMR Consultation, we explained our proposals to impose charge controls on BT for certain wholesale ISDN30 services and wholesale ISDN2 services respectively.
- 9.5 While we do not seek to repeat these explanations here, they remain relevant to the revised Conditions 7A and 7C to 7E that we propose in this consultation, since the drafting and effect of the proposed Conditions remains largely the same. We focus in this Section on the changes to the versions of the Conditions notified with the July 2013 FAMR Consultation and July 2013 Consultation.
- 9.6 The text of the revised proposed LLU, WLR, ISDN2 and ISDN30 SMP Conditions is set out in Part I of Annex 15 of this consultation. Except as specified below, we are maintaining our proposals from the FAMR Consultation and the July 2013 Consultation.<sup>419</sup>

#### Proposed amendments relevant to the draft LLU charge control condition

- 9.7 In Section 6 of this consultation, we set out our revised proposals to have five separate baskets for LLU ancillary services.
- 9.8 We have revised proposed Condition 7A to give effect to these proposals. As explained in Section 6, we have proposed a control on each of the five separate baskets of LLU ancillary services, which are separately identified in proposed 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.
- 9.9 Parts 1 to 5 of the Annex to proposed Condition 7A set out details of those individual products and/or services which we propose to include within each of the baskets set out above. As explained in Section 6, we have specified the starting ('initial') charge for each individual product and/or service included in a LLU ancillary services basket.

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<sup>419</sup> In addition to the changes we propose in this consultation, we have also take this opportunity to correct minor typographical errors in proposed Conditions 7A and 7C which were published in the July 2013 Consultation.

- 9.10 In line with our proposals in the July 2013 Consultation, we propose that the aggregate charges for each basket of services will be subject to a CPI-X charge control.
- 9.11 Further, consistent with our proposals on basket charge controls in the July 2013 Consultation, we propose to set sub-caps for each individual service or product in a LLU ancillary services basket. These proposed sub-caps are set out in proposed Condition 7A.5, and we are consulting on a sub-cap for each individual service within a basket of the controlling percentage increased by 5-7.5 percentage points. As discussed in Section 6 of this consultation, our preference is to use the top end of this range (i.e. to use 7.5%).

### Proposed amendments relevant to the draft WLR charge control condition

#### *WLR Connection Basket*

- 9.12 In Section 6 of this consultation, we set out our proposal to replace the proposed individual charge control on WLR New Connection (i.e. any charge for connection of an analogue line to a premise) with a basket control over the following two products:
- WLR Standard Connection; and
  - WLR Start of Stopped MPF Line.
- 9.13 We have called this proposed basket the WLR Connection Services basket.
- 9.14 We have structured proposed Condition 7C to give effect to this proposal. The Annex to Condition 7C sets out details of those individual products and/or services which we propose to include within the WLR Connection Services basket. The relevant formula we are proposing for calculating the percentage change of this basket is set out in Condition 7C.4.
- 9.15 In line with our approach to the LLU ancillary services baskets contained in proposed Condition 7A, and as discussed in Section 6 of this consultation, we also propose to include details of the starting ('initial') charge for each of the individual products included in the WLR Connection Services basket.
- 9.16 Consistent with our approach to the LLU ancillary services baskets, we also propose to set sub-caps for each individual service within the WLR Connection Services basket. These sub-caps are set out in Condition 7C.5, and we are consulting on a sub-cap for each individual service within the basket of the controlling percentage increased by 5-7.5 percentage points. As discussed in Section 6 of this consultation, our preference is to use the top end of this range (i.e. to use 7.5%).

#### *Definition of Wholesale Analogue Line Rental*

- 9.17 In the July 2013 Consultation, we proposed an individual charge control on the WLR rental service. Consistent with the approach in previous reviews of the WFAEL market, the intention was that this would cover the basic WLR service. By way of implementation in draft Condition 7C.1(a) we used the definition Wholesale Analogue Line Rental. Wholesale Analogue Line Rental was defined broadly as "*an electronic communications service provided by the Dominant Provider to a Third Party for the use and Ordinary Maintenance of an analogue Exchange Line*". We consider that this definition is overly broad as it will capture WLR services other than the basic product.

- 9.18 In order to ensure that the obligation imposed in the text of the charge control is consistent with our intended objective, we have revised proposed Condition 7C.1(a) to apply specifically to the basic wholesale analogue line rental product, commonly referred to as Analogue Core WLR Rental.

#### *Simultaneous provision of WLR services and SMPF New Provide*

- 9.19 In Section 6 and Annex 11 of this consultation, we set out our proposal to require Openreach to provide a discount on the charges for WLR Standard Connection or WLR Start of Stopped MPF Line when either is ordered and purchased simultaneously with SMPF New Provide.
- 9.20 We have amended proposed Condition 7C to give effect to this proposal, which we propose will be implemented by reducing the charge for WLR Standard Connection and/or WLR Start of Stopped MPF Line, respectively.

#### *Caller Display*

- 9.21 In Section 6 of this consultation, we set out our proposal to impose a charge control on BT for Caller Display (previously referred to as "Caller ID").
- 9.22 We have amended proposed Condition 7C to give effect to this proposal, which we propose will be implemented by an immediate one-off adjustment to reduce the charge for Caller Display to the level of LRIC.

#### Proposed amendments relevant to the draft LLU, WLR, ISDN2 and ISDN30 charge control conditions

##### *Proposed values of 'X'*

- 9.23 The revised ranges of values of 'X' proposed for each service or basket are set out in Section 8 of this consultation. We have reflected these revised figures in proposed Conditions 7A and 7C.

##### *Formulae to show how the Percentage Change is calculated for each service*

- 9.24 At paragraphs 8.12 to 8.15 of the July 2013 Consultation we explained how we had set the formulae that we proposed to use (and which we expected Openreach to use) to determine the percentage change for single product services and for baskets of services.
- 9.25 However, Openreach noted that the proposed Conditions for the ISDN2 and ISDN30 charge controls were drafted slightly differently to the LLU and WLR charge controls, even though they were mathematically the same. Openreach considered that for clarity and to avoid confusion the wording and formulae of the legal instruments should be aligned. As noted in Section 2 of this consultation, we agree with Openreach that it would be clearer and avoid confusion to have the same formulae for all charge controls as far as possible.

- 9.26 Since the July 2013 Consultation and the July 2013 FAMR Consultation, we have finalised charge controls in the 2013 Narrowband Market Review.<sup>420</sup> We therefore propose to adopt in Conditions 7A, 7C, 7D and 7E the style of the charge control conditions in the 2013 Narrowband Market Review.
- 9.27 These proposed formulae are set out at proposed Conditions 7A.4 and 7C.3 (in relation to single product services) and at proposed Conditions 7A.3, 7C.4, 7D.3 and 7E.3 (in relation to baskets of services).
- 9.28 As discussed in Section 6 of this consultation, we are also now proposing that, for the purposes of calculating the charge control in the first year of the proposed basket controls (for the LLU, WLR, ISDN2 and ISDN30 charge controls), the charge in the first year of the basket charge controls will be set by reference to the charges announced as at the date of this consultation (taking into account anticipated price changes due to take effect prior to the implementation of these charge controls). This amendment has been set out in Conditions 7A.3, 7C.4, 7D.3 and 7E.3.

### *Ensuring compliance with the charge controls*

- 9.29 In proposed Conditions 7A.12, 7C.8 7D.7 and 7E.7, as set out in the July 2013 Consultation and July 2013 FAMR Consultation, we proposed a power of direction for Ofcom to require Openreach to make an appropriate adjustment to its charges if, in the last year of the controls, it were likely to fail to secure that the percentage change does not exceed the controlling percentage.
- 9.30 As referenced in Section 2 of this consultation, we now propose to require Openreach to automatically repay any excess revenue to affected CPs where the percentage change in revenues in any year exceeds the controlling percentage. 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. These revisions are set out at proposed Conditions 7A.6(e), 7C.6(e), 7D.4(e) and 7E.4(e).

### *Prior Year Adjustment Ratio*

- 9.31 In the July 2013 Consultation, we proposed that, for charge controlled services, Openreach should be able to carry over any price reductions it makes in excess of the requirements of the charge control for that year. In order to achieve this, we proposed to include a prior year adjustment ratio within the formula used to determine the controlling percentage.<sup>421</sup>
- 9.32 In its response, Openreach agreed with this prior year adjustment ratio, and considered that it was preferable to the carry forward mechanism used in previous WLR and LLU charge controls, as it was mathematically more accurate. However, as discussed above, we agree with Openreach that it would be clearer and avoid confusion to have the same formulae for all charge controls as far as possible and have therefore proposed certain changes to the Conditions in order to align them more closely with the style of the charge control conditions in the 2013 Narrowband Market Review.

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<sup>420</sup> [http://stakeholders.ofcom.org.uk/binaries/consultations/nmr-2013/statement/Final\\_Statement.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/nmr-2013/statement/Final_Statement.pdf)

<sup>421</sup> See paragraphs 8.21 to 8.23 of the July 2013 Consultation.

9.33 Although our proposed amendments to the LLU, WLR, ISDN2 and ISDN30 charge controls do not involve an explicit prior year adjustment ratio term, the revised Conditions are equivalent in their effect to those set out in our July 2013 Consultation and July 2013 FAMR Consultation. Specifically, we propose to replace the concept of prior year adjustment ratio with that of 'deficiency' and 'excess'. Where the percentage change is greater than the controlling percentage (a situation of 'excess') or is less than the controlling percentage (a situation of 'deficiency'), then the controlling percentage in the following year is adjusted so as to return charges to the compliant level determined by the charge control. The effect of this is the same as the equations in the July 2013 FAMR Consultation and July 2013 Consultation, but we have specified it in a way consistent with other charge controls. These revisions are reflected in proposed Conditions 7A.6, 7C.6, 7D.4 and 7E.4.

## Legal tests

- 9.34 In Section 15 and at paragraphs 12.51 and 14.40 of the July 2013 FAMR Consultation, we explained why we considered that the proposed imposition of a charge control for LLU and WLR, and wholesale ISDN2 and wholesale ISDN30 services would be consistent with the relevant tests in the Act.
- 9.35 In Section 8 of the July 2013 Consultation (LLU and WLR), and at paragraphs 15.66 to 15.76 (wholesale ISDN30 services) and 15.125 to 15.136 (wholesale ISDN2 services) of the July 2013 FAMR Consultation, we set out why we considered that the specific form of the charge controls that we were proposing meet the relevant tests and how, in formulating the proposals set out in those consultations, we had complied with our relevant statutory duties.
- 9.36 In the following, we set out why we consider that, in light of the further revisions to the proposed charge control Conditions, we continue to consider that the specific form of the charge controls that we are proposing meets the relevant tests and how, in formulating the proposals in this consultation we have complied with our relevant statutory duties. This discussion should be read in conjunction with Section 15 of the July 2013 Consultation and the July 2013 FAMR Consultation and we cross refer back to these where appropriate.
- 9.37 To give regulatory effect to the proposals set out in this consultation, we are proposing four SMP conditions under section 87(9) of the Act: 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 Schedules 1 to 4 to the statutory notification published under section 48A of the Act in Part I of Annex 15 to this consultation.<sup>422</sup>
- 9.38 Given the substantial overlap in our reasoning, we have set out our position on the charge controls for LLU and WLR together below. For this reason, we have also set out our position on the charge controls for wholesale ISDN2 and wholesale ISDN30 services together below.
- 9.39 We are satisfied that our proposals continue to meet the relevant tests set out in the Act and our statutory duties. Our reasons are set out below.

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<sup>422</sup> Proposed Conditions 7A and 7C replace those notified in the July 2013 Consultation while we propose amendments to Conditions 7D and 7E notified in the July 2013 FAMR Consultation.

## LLU and WLR charge controls

### *Our duties and objectives*

- 9.40 We discussed our duties and objectives specific to the LLU and WLR charge controls in detail in Sections 3 and 4 of the July 2013 Consultation. At paragraphs 8.30-8.33 of the July 2013 Consultation we set out our opinion of the likely impact of our proposals was that the performance of our general and specific duties under section 3 and 4 of the Act are secured or furthered by our proposals.
- 9.41 We continue to consider that the charge controls being proposed in this document for LLU and WLR services will ensure that charges for wholesale services will be set at a level that will enable CPs (other than Openreach) to compete in the provision of downstream services. We continue to have regard to the requirement to promote competition and to secure efficient and sustainable competition for the benefit of consumers and we have placed particular emphasis on the promotion of competition. In making these proposals we have sought the least intrusive means to achieve our policy objectives.

### *Powers under sections 87 and 88*

- 9.42 Section 87(1) of the Act provides that, where Ofcom has made a determination that a person has SMP in an identified services market, Ofcom shall set such SMP conditions authorised by that section as Ofcom considers it appropriate to apply to that dominant provider in respect of the relevant network or relevant facilities and apply those conditions to that person.
- 9.43 As indicated in Section 8 of the July 2013 Consultation, section 87(9) authorises the setting of SMP service conditions, including price controls and the setting of rules in relation to recovery of costs and cost orientation. Further, where Ofcom seeks to set an SMP condition falling within section 87(9), it is also required to comply with the requirements of section 88.
- 9.44 Section 88 prohibits the setting of SMP conditions under section 87(9) of the Act except where it appears, from the market analysis, that there is a relevant risk of adverse effects arising from price distortion; and it 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 end users. We are also required to take into account the extent of BT's investment in wholesale local access and wholesale fixed analogue exchange lines.
- 9.45 In our opinion, for the reasons set out at paragraphs 8.34 to 8.48 of the July 2013 Consultation and in this consultation, the proposed Conditions 7A and 7C, as revised to take account of the proposals in this document, continue to satisfy section 88 of the Act.
- 9.46 In particular, we remain of the opinion that, absent the proposed charge control, there is a real risk of adverse effects arising from price distortion by Openreach as it might fix and maintain some or all of its prices for LLU and/or WLR at an excessively high level and/or price in such a way as to create a margin squeeze in downstream markets.

- 9.47 Further, we continue to consider that the proposed charge control will promote efficiency and sustainable competition and confer the greatest possible benefits on the users of public electronic communications services.
- 9.48 We also remain of the view that our proposed charge controls are in line with section 88(2) of the Act which requires us to 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. In particular, when proposing the charge controls for LLU and WLR services we have also taken into account the need to ensure that Openreach has the incentives to invest and innovate where it is efficient to do so. As discussed in paragraphs 8.47 and 8.48 of the July 2013 Consultation, the charge controls are set for a fixed duration and 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 section 47 tests*

- 9.49 In addition to the above, Ofcom must be satisfied that proposed Conditions 7A and 7C satisfy the test in section 47(2) of the Act.
- 9.50 We remain satisfied, for the reasons set out in paragraphs 8.49-8.60 of the July 2013 Consultation, that this test is met in relation to the proposed Conditions 7A and 7C, as revised to take account of the proposals in this document. In particular, we are satisfied that the proposed Conditions are:
- objectively justifiable, in that they continue to require BT to provide wholesale services at prices that promote competition and incentivise BT to seek efficiency gains;
  - not unduly discriminatory, in that any CP (including BT) will be able to access the services in question at the levels set by the proposed charge controls. Moreover, the proposed charge controls do not discriminate unduly against BT, as BT is the only operator that we have provisionally identified as having SMP in these markets;
  - proportionate, since our proposed charge controls are appropriate to achieve the aim of addressing BT's ability and incentive to charge excessive prices for the services covered by the charge controls, necessary in that they do not, in our view, impose controls on charges that go beyond what is required to achieve the aim of addressing Openreach's ability and incentive to charge excessive prices, and they do not produce adverse effects that are disproportionate to the aim pursued;
  - transparent, in that the proposed Conditions are clear in their intention to ensure that charges for wholesale services are set at a level that will enable CP's to compete in the provision of downstream services.

*We have considered sections 3 and 4 of the Act*

- 9.51 We have considered our duties under section 3 and all the Community requirements set out in section 4 of the Act and, for the reasons set out at paragraphs 8.62 to 8.63, we continue to consider that our proposals are consistent with our duties under section 3 and 4 of the Act.

9.52 In particular, we continue to consider that our proposals will:

- promote efficient and sustainable competition for the benefit of consumers; and
- seek to ensure the availability throughout the UK of a wide range of electronic communications services,

which will further citizen and consumer interests in the relevant markets. This is relevant to both sections 3 and 4 of the Act.

9.53 Further, we remain of the view that, in proposing the charge controls, we have had regard to the desirability of encouraging investment and innovation in relevant markets and encouraging the availability and use of high speed data transfer services throughout the United Kingdom.

### *EC Recommendation on non-discrimination and costing methodologies*

9.54 In addition to the above, when considering our further proposals, we have also taken utmost account of the recent EC Recommendation on non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment.<sup>423</sup>

9.55 At the time of publishing in the July 2013 Consultation, this recommendation was draft. Nevertheless, at paragraphs 3.192 to 3.202 of the July 2013 Consultation, we discussed the implications of the draft recommendation, and described how we had taken account of it in our consultation. Further, where our proposals departed from the approach set out in the draft recommendation, we explained our reasons.

9.56 On 11 September 2013, a final version of this recommendation was adopted by the European Commission. Whilst preparing this further consultation, we have taken utmost account of the final EC Recommendation and our position remains as set out in the July 2013 Consultation.

### ISDN2 and ISDN30 charge controls

9.57 We discussed our duties and objectives specific to the ISDN2 and ISDN30 charge controls in detail in Section 15 of the July 2013 FAMR Consultation. In particular, we discussed at paragraphs 15.66 – 15.76 (ISDN30) and 15.125 – 15.136 (ISDN2) of the July 2013 FAMR Consultation how we had satisfied the relevant tests in the Act and how, in formulating proposed Conditions 7D and 7E, we had complied with our relevant statutory duties.

9.58 We consider that our revised proposals continue to satisfy the relevant tests and evidence compliance by Ofcom with its statutory duties. In particular, we remain of the view that proposed Conditions 7D and 7E, as revised to take account of the proposals in this document:

- continue to satisfy section 88 of the Act, for the reasons set out in paragraphs 15.68-15.73 (ISDN30) and 15.127-15.132 (ISDN2) of the July 2013 FAMR Consultation;

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<sup>423</sup> <https://ec.europa.eu/digital-agenda/en/news/commission-recommendation-consistent-non-discrimination-obligations-and-costing-methodologies>

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- continue to satisfy section 47(2) of the Act. In particular, for the reasons set out in paragraphs 15.76 (ISDN30) and 15.135 (ISDN2) of the July 2013 FAMR Consultation, we continue to consider that proposed Conditions 7D and 7E are objectively justifiable, not unduly discriminatory, proportionate and transparent; and
- will enable us to secure or further our general and specific duties under sections 3 and 4 of the Act, for the reasons set out in paragraphs 15.75 (ISDN30) and 15.134 (ISDN2) of the July 2013 FAMR Consultation.

## Minimum service level proposals

### Implementation

- 9.59 In the July 2013 FAMR Consultation, we set out our proposal to impose a new SMP services condition on BT, which imposed certain minimum standards for provisioning and fault repair in relation to WLR and LLU services. Our proposals and the legal basis for them were set out in detail at paragraphs 10.285 to 10.332 of the July 2013 FAMR Consultation. We do not repeat this explanation here. The proposed form of the legal condition was set out at proposed Condition 12 in Annex 11 to the July 2013 FAMR Consultation.
- 9.60 As discussed in detail at Section 3 of this consultation, we specify in this consultation the minimum level of performance for MPF and WLR in relation to:
- the first available date for a provision appointment;
  - the completion of provision appointments; and
  - the completion of repairs for WLR and LLU services.
- 9.61 We have also proposed a change in the number of regions against which compliance with the minimum standards will be assessed.
- 9.62 To give effect to these proposals, we propose revised text for this Condition 12 in Schedules 5 and 6 to the statutory notification set out at Part I of Annex 15 to this consultation. Except as specified above, we are maintaining our proposals from the July 2013 FAMR Consultation.

### Legal tests

- 9.63 For the reasons set out below, we are satisfied that the proposed Condition 12 imposing defined minimum standards on BT in the delivery of certain LLU and WLR services, including the level at which the minimum standards are proposed to be set, meets the various tests set out in the Act.

### Powers under section 87

- 9.64 Section 87(1) of the Act provides that, where Ofcom has made a determination that a person has SMP in an identified services market, Ofcom shall set such SMP conditions authorised by that section as Ofcom considers it appropriate to apply to that dominant provider in respect of the relevant network or relevant facilities and apply those conditions to that person.

- 9.65 As indicated at paragraphs 10.325 to 10.331 of the July 2013 FAMR Consultation, section 87(3) authorises the setting of SMP service conditions in relation to the provision of network access. Section 87(5)(b) of the Act provides that such conditions may include provision for securing that these obligations are complied with within the periods and at the times required by or under the conditions. We note in this regard 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.
- 9.66 We have also taken into account the factors set out in section 87(4) of the Act and we consider that, for the reasons set out at paragraphs 10.291 to 10.324 of the July 2013 July 2013 FAMR Consultation and Section 3 of this consultation, the minimum standards that are proposed in this Condition 12 are necessary to ensure an appropriate level of quality of service so as to secure effective competition, including economically efficient infrastructure based on competition, in the long-term.

#### We have considered the section 47 tests

- 9.67 We also consider that proposed Condition 12, including the minimum standards proposed, meets the criteria in section 47(2) of the Act. The proposed Condition is:
- objectively justifiable, in that its purpose remains to ensure mandatory minimum standards in relation to key services supporting network access. We consider that the level of the minimum standards that are proposed is necessary to secure an appropriate level of service by Openreach;
  - not unduly discriminatory, in that the proposed minimum service levels will only apply to BT which we have proposed as the only CP having SMP in the relevant markets in the UK, excluding the Hull Area;
  - proportionate, since our proposed minimum service levels continue to be targeted specifically at those areas for which regulation is required. We consider that the proposed Condition is 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 and that the standard is the minimum required to achieve this objective. Further, we remain of the view that, without intervention, the level of service by Openreach has fallen below what we consider to be an acceptable level. Also, as explained in Section 3 of this consultation, we are proposing that BT is sufficiently funded to meet the required standard through the charge controls; and
  - transparent, in that the revised text of the proposed Condition is clear in what it is intended to achieve and that the standards that we are imposing on BT and in relation to which areas are clear on the face of proposed Condition 12. In particular, we consider it is clear that the intention of the proposed Condition is to ensure that BT maintains a minimum level of quality of service in relation to a number of key factors of importance to CPs that purchase these wholesale inputs. This intention has not changed since the July 2013 FAMR Consultation.

#### We have considered our duties under sections 3 and 4 of the Act

- 9.68 We have considered our duties under section 3 and all the Community requirements set out in section 4 of the Act and continue to consider that the performance of our general and specific duties under sections 3 and 4 of the Act is secured or furthered

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by our proposal to impose certain minimum service levels for LLU and WLR services on BT by way of an SMP services condition.

- 9.69 In particular, we remain of the view that, by ensuring that BT adheres to prescribed minimum quality of service standards in relation to the provision of new lines and the repair of faults, the proposed Condition would further the interests of citizens in relation to communications matters and further the interests of consumers in relevant markets by promoting competition in accordance with section 3 of the Act.
- 9.70 Further, in line with the Community requirements set out at section 4 of the Act, we continue to consider that proposed Condition 12 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.

## **Proposed additional KPI requirement in relation to the number of repairs and provisions of new lines which take place outside the SLA period**

### **Implementation**

- 9.71 In the July 2013 FAMR Consultation, we proposed to make a number of Directions pursuant to proposed Condition 11 requiring BT to publish certain KPI's in respect of VULA, LLU, WLR analogue and digital (ISDN2 and ISDN30). Our proposals were set out in detail at paragraphs 10.246 to 10.284 and the form of the proposed charge controls are set out in a series of notifications at Annex 11 of the July 2013 FAMR Consultation.
- 9.72 The main revision to the proposed SMP directions set out in the July 2013 FAMR Consultation that we are consulting on in this document is a proposal to include an additional set of KPIs for each service subject to the minimum standard in proposed Condition 12 (namely, MPF and WLR) to require BT to publicly report the number of repairs and provisions of new lines which take place outside the SLA period. Our proposal is discussed in detail in Section 3 of this consultation.
- 9.73 In light of the above, we are also proposing to remove the proposed KPI entitled "*Timing of fault repairs*" for each service that is subject to the additional set of KPI's discussed above (namely, MPF and WLR). As discussed in Section 3 of this consultation, we consider that the "*Timing of fault repairs*" KPI fulfils a similar function to that of the proposed additional 'tail' KPIs. As a result, we consider it disproportionate to impose both KPIs on BT.
- 9.74 As noted above at paragraph 9.61, we have also proposed a change in the number of regions against which compliance with the minimum standards (and KPIs) will be assessed. We are proposing that the definition of "Forecasting Region" used for the purposes of determining the geographical scope of some of the KPI's on Quality of Service is amended to reflect BT's 9 General Manager patches and Northern Ireland (we had previously proposed that this definition would be assessed against BT's 26 forecasting regions and Northern Ireland).

- 9.75 To give regulatory effect to these proposals, we have published a further set of notifications in respect of the KPIs for LLU, WLR, ISDN2 and ISDN30<sup>424</sup>, which have the effect of modifying the corresponding versions of the proposed KPIs in Part III to Annex 11 of the July 2013 FAMR Consultation. The proposed text of the new KPI requirement for these directions is set out in the schedules to the statutory notifications contained in Part II of Annex 15 to this consultation.
- 9.76 Other than as indicated above, we are not proposing any revisions to the text of the proposed SMP directions.

### **Legal tests**

- 9.77 In the July 2013 FAMR Consultation, we considered whether the imposition on BT of a requirement to publish certain KPIs would be consistent with the relevant tests in the Act and whether, in formulating the proposed KPI directions we had complied with our relevant statutory duties.
- 9.78 In particular, we highlighted that the KPI directions were each proposed pursuant to proposed Condition 11 in Annex 11 to the July 2013 FAMR Consultation, which entitles Ofcom to direct BT to publish all such information as to quality of service in relation to network access in the wholesale local access, wholesale fixed analogue exchange line, wholesale ISDN2 and wholesale ISDN30 markets as it may, from time to time, direct.
- 9.79 As highlighted in paragraphs 10.246 – 10.284 of the July 2013 FAMR Consultation, we consulted on the basis that we had complied with our relevant statutory duties and the relevant tests in the Act.
- 9.80 While we do not seek to repeat these explanations here, we remain of the view that, in formulating the proposed additional KPI requirement, we have complied with our statutory duties and the relevant legal tests in the Act.

### **The section 49 tests**

- 9.81 We consider that our proposed further KPIs for MPF and WLR services meet the requirements in section 49 of the Act. We consider that the proposed KPI directions are and remain:
- objectively justifiable, in that there remains a need to publish specific KPI's to ensure that we can monitor any undue discrimination in the market. The newly proposed KPIs are required to identify the potential for gaming of the minimum standards proposed in Condition 12;
  - not unduly discriminatory, in that they will still only apply to BT and it is only BT that is subject to proposed Condition 11;
  - proportionate, since BT is still only required to publish specific KPI data related to key business practices. Further, the proposed additional KPI requirement has been drafted specifically to reflect the data which BT already collects. Consistent with the proposed KPI requirements set out in the July

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<sup>424</sup> For ISDN2 and ISDN30, we are proposing to amend the directions only to amend the definition of "Forecasting Region".

2013 FAMR Consultation, BT therefore already has systems and procedures in place to collect this data; and

- transparent, in that the proposed KPI directions remain clear as to what information BT would be required to publish and supply under proposed Condition 11.

### We have considered our duties under sections 3 and 4 of the Act

9.82 We have considered our duties under the Act, including our general duties under section 3 and all the Community requirements set out in section 4 and are of the opinion that our proposal to include a new KPI requirement to monitor the number of repairs and provisions of new lines which take place outside the SLA period will secure or further our duties.

9.83 We are of the opinion that the proposed additional KPI requirement will discourage BT from de-prioritising repairs or provisioning where it becomes clear that a service will not be deliverable within the SLA period. We consider that this will further the interests of citizens and consumers in the relevant markets, in accordance with section 3 of the Act.

### EC Recommendation on non-discrimination and costing methodologies and the BEREC common positions

9.84 Whilst preparing our further proposals on KPIs, as set out in this consultation, we have taken utmost account of the final EC Recommendation on non-discrimination obligations and costing methodologies and the BEREC common positions<sup>425</sup> and our position remains as set out at paragraphs 10.280 to 10.284 of the July 2013 FAMR Consultation.

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<sup>425</sup> 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\\_BE\\_REC\\_COMMON\\_POSITION\\_ON\\_BEST\\_PRACTICE\\_IN\\_REMEDIES\\_ON\\_THE\\_MARKET\\_FOR\\_WHOLESAL.pdf](http://www.berec.europa.eu/files/document_register_store/2012/12/20121208163628_BoR_(12)_127_BE_REC_COMMON_POSITION_ON_BEST_PRACTICE_IN_REMEDIES_ON_THE_MARKET_FOR_WHOLESAL.pdf).