Re-prioritising BT's remaining Undertakings commitments on information systems separation

Contents

Section 1

Summary

Background

1.1 This Statement relates to certain obligations that British Telecommunications plc ("BT") has concerning the separation of its information systems between Openreach and other parts of BT. It sets out and explains our decision to agree to a variation to BT's Undertakings under the Enterprise Act 2002 ("Enterprise Act") in relation to these obligations following consultation with our stakeholders. Openreach is the BT division responsible for the majority of wholesale products sold to BT and external communications providers ("CPs"). These changes affect how BT provides certain services to other communications providers, and ultimately how effective competition is in delivering benefits to residential and business customers.

1.2 Our decisions relate to a variation to a set of commitments that BT offered in 2005 ("the Undertakings")[1] to address competition concerns that we had identified in certain fixed telecommunications markets[2]. Much has already been achieved since then with the support of the Undertakings, as set out in more detail in our latest review of the implementation of the Telecoms Strategic Review ("TSR")[3]. Specifically:

- BT has delivered over 80 per cent of its Undertakings obligations, and the level of service that it provides to its competitors (in accordance with the Undertakings) has improved;

- Consumers have benefited from greater availability and choice of services - including broadband, bundled voice telephony and broadband services, 'triple-play' services[4], and business connectivity services based on Ethernet[5]; and

- Broadband competition is very strong. There are now over six million broadband lines based on local loop unbundling ("LLU"). BT's retail share of broadband is now one of the lowest of the incumbent operators' market shares in the OECD.

1.3 But some key Undertakings milestones have yet to be achieved. This document relates largely to those remaining milestones that depend on BT's information systems separation programme, or which are affected by the delay and revision in BT's deployment plans of a next generation core network ("NGN")[6]. BT's NGN is called its 21st Century Network ("21CN").

1.4 There are different levels to 'systems separation', but the ultimate intent is for Openreach's data, applications and hardware to be separated from the rest of BT ("RoBT"). Achieving this is easier in the case where new systems are being deployed. For this reason, Openreach's key transaction system has been designed

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[1] pursuant to section 154 of the Enterprise Act

[2] *Final statements on the Strategic Review of Telecommunications, and undertakings in lieu of a reference under the Enterprise Act 2002,* at http://www.ofcom.org.uk/consult/condocs/statement_tsr/

[3] *Impact of the Strategic Review of Telecoms,* at http://www.ofcom.org.uk/telecoms/btundertakings/

[4] Voice telephony, broadband and television services

[5] Ethernet is a protocol that controls data transmission over a communications network

[6] For more on NGNs, see *Next Generation Networks: Responding to recent developments to protect consumers, promote effective competition and secure efficient investment*, at http://www.ofcom.org.uk/consult/condocs/ngndevelopments/

with separation in mind from the start. However, to satisfy its separation obligations BT also has to ensure that information relating to its legacy retail installed customer base is migrated to systems that are separate from those used by Openreach.

1.5   We consulted in May 2009 ("the Consultation Document") on proposals to change BT's systems separation obligations in the Undertakings[7]. These proposals would enable BT to re-prioritise its systems-related resources so that they could be used in part to deliver a range of new short- and medium-term service developments required by Openreach's customers. The proposals would also permit BT to delay the migration of BT's legacy retail customer records to systems that are separate from Openreach, and result in delayed physical separation of Openreach's systems from RoBT.

The consultation proposals

1.6   There were two key parts to the proposed changes. Firstly, there was a set of new BT commitments to cover the delivery of service developments requested by Openreach's customers. Secondly, changes were proposed to relax a number of BT's remaining Undertakings commitments relating to systems separation.

1.7   The proposed new obligations in respect of new service developments reflected the priorities set by Openreach's customers. They covered both improvements to Openreach's current levels of service and some new product developments, a number of which would specifically benefit those CPs serving business customers.

1.8   Openreach would be required to deliver the additional developments as part of the Undertakings. Whilst the Undertakings would provide flexibility for changes to be made to the original list of commitments, for example as the priorities of Openreach's customers change, such changes would be subject to tight change control criteria.

1.9   In terms of the remaining systems separation commitments in BT's Undertakings, three broad changes were proposed. These concern:

- the approach and timing for full physical separation of legacy systems: this would proceed according to more pragmatic considerations[8], and over a longer period rather than the former fixed timescale (of 30 June 2010);

- the migration of BT's end users' customer records onto systems that are separate from Openreach's: longer timescales were proposed for this, reflecting the extra time that BT will take to migrate its business customers; and

- the migration of BT's legacy customer base to equivalence of inputs ("EOI") products, where this has not been achieved[9]: As with systems separation, longer timescales were proposed, plus a change in how product EOI is measured[10].

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7 *Re-prioritising BT's remaining Undertakings commitments on information systems separation*, http://www.ofcom.org.uk/consult/condocs/btundertakings/

[8] such as when old information systems hardware is replaced or rationalised
[9] EOI means BT providing the same product or service to all CP (including BT) on the same timescales, terms and conditions. See paragraph 2.4 for a fuller definition.
[10] Product EOI changes from being measured by the percentages of migration for individual products to being measured by the percentage of 'legal entities' that are migrated to using EOI products

1.10   The proposed change in measuring progress towards product EOI would have a further knock-on impact on a number of existing exemptions granted to the Undertakings. In addition, a further amendment to an existing Undertakings' exemption (relating to Featurenet) was proposed due to the delay in BT's deployment of its 21CN.

1.11   Figure 1.1 below summarises the key changes on which we consulted.

Our response to consultation comments

1.12   A number of stakeholders recognised the value of the proposal to re-prioritise BT's resources towards delivering activities of higher priority to industry. However, there was also some opposition in principle to relaxing some of BT's Undertakings commitments.

1.13   The main concerns raised, however, focused on two substantive issues:

- delays in achieving EOI for individual products, and what the consequential competitive impact might be; and

- perceived weaknesses in the clarity and content of the additional Openreach service commitments, as well as imprecision in the change control process to govern their delivery.

1.14   On delays in achieving EOI, we consider the overall impact of the changes to be limited, for a number of reasons. Firstly, the scope of concerns should be limited to the legacy installed BT customer base, as almost all new supply for BT's downstream divisions is provided on an EOI basis. Secondly, significant migration will still be needed in order for BT to meet its revised separation milestones for the high-volume products (analogue voice, ISDN2 and ISDN30). Thirdly, performance measures for these products suggest that CPs do not suffer a material competitive disadvantage. Indeed, in many instances the EOI product variants perform better and are better specified than the related legacy non-EOI products. Other obligations (e.g., no undue discrimination between customers) also apply to the copper-based products – ISDN, WLR, LLU[11] – due to BT's designated significant market power status.

1.15   For the more niche products (e.g., Wavestream Connect & Regional, CCTV Access, Media & Broadcast) we consider that there are currently limited differences between the EOI and non-EOI variants of these products, and in some respects the EOI product inputs are better specified (for example, by supporting KCIs[12] as well as service level agreements and guarantees). Also, in a number of cases these products are legacy products that have declining volumes or are being replaced by new product variants (such as EOI-based Ethernet products) over time. Lastly, any product or process differences are not exploited by BT downstream, as BT's relevant downstream products offer the same service level agreements and service level guarantees regardless of whether these are supported by EOI product inputs or they rely on legacy internal supply.

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[11] Which can be an input into a Featurenet service

[12] KCIs (or "keeping customers informed") is a facility by which CPs are automatically alerted by Openreach's systems as to the status of orders, fault repairs, etc.

Figure 1.1   Summary of consultation proposals to change the Undertakings

Issue	Original commitment	Revised commitment as set out in the Consultation Document
Openreach delivery of specific service developments	None	Commitment on Openreach to deliver a set of new service developments and functionality, published in a roadmap Changes to the above to be subject to an agreed change control process and where specific developments are removed they would need to be replaced with others to ensure that the revised commitments are comparable to the original commitments
Approach and timing of full physical systems separation	Full physical separation by 30/6/2010 except for systems exempted under Annex 6	Except for systems exempted under Annex 6, OSS for Openreach to be run physically separate from RoBT when reasonably practicable and proportionate, unless otherwise agreed by BT and Ofcom 80% of customer service records to be separated by 30/6/2010 90% of customer service records to be separated by 31/12/2012 A further percentage of customer records (to be advised no later than the end of 2011) to be separated by 30/6/2014
Product EOI obligations	IBMC dates: • WLR3 analogue - 30/6/2010 • ISDN2 – 31/3/2009 • ISDN30 – 31/12/2009	All IBMC dates to be removed
Product EOI obligations for various exemptions	IBMC dates: • 30/6/2010 – Featureline; Featurenet; MegaStream Ethernet; Redcare CCTV; Media & Broadcast; Featurenet SRUs • 30/9/2010 - Wavestream Connect & Regional	All IBMC dates to be removed
Messaging and Bill Direct exemption	Permission for specific BT Wholesale staff to access relevant Openreach systems until 30/6/2010	End date of exemption extended until physical separation of relevant OSS completed

1.16   Further, the additional Openreach developments must be treated as a counterbalancing benefit to delays in delivering systems separation and product EOI. We note that a number of business-related developments are included in the additional Openreach developments, which offsets the fact that it is mainly business-focused CPs that are impacted by BT's systems separation delays.

1.17   In recognition of stakeholder concerns on product EOI, BT has agreed to a number of additional measures since we consulted. The first of the following measures is a formal change to the legal wording of the Undertakings, the others are voluntary commitments which we have agreed with BT:

- BT's Undertakings commitments about providing the June 2014 milestones for customer separation and EOI will now oblige it to "demonstrate continued *significant* progress towards the migration of business customers" beyond the December 2012 levels. We would therefore expect this revised milestone to demonstrate material progress towards complete EOI. This requirement should avoid a situation in which there is only minimal progress towards complete product EOI, and notably should encourage BT to deliver more substantial progress towards EOI for the larger volume products affected by the removal of IBMC dates;

- The EAO will review key performance metrics comparing EOI and non-EOI/legacy supply for high-volume products, as reported to them by Openreach. This will begin by January 2010 at the latest. We consider that this will place a greater pressure on Openreach to deliver a broadly equivalent level of performance to other CPs and to those BT downstream customers depending on non-EOI inputs) This voluntary commitment is set out in a side letter to this Undertakings variation[13];

- BT will report to the EAO on a number of non-binding milestones to track progress in developing its business stack. Details on this have been confirmed since the Consultation Document. The details of these non-binding milestones are also set out in the side letter to this Undertakings variation;

- BT will report to us on what its progress in building the business stack implies for expected migration of specific product groupings to that new system. This complements plans already agreed with BT for reporting on actual progress in migrating individual products, as part of the regular Undertakings roadmap reviews with us. These measures should give useful extra visibility on progress with the more niche, fibre-based products; and

- Openreach will consult with its customers about easing the migration to EOI product variants of those customers currently consuming the relevant legacy/non-EOI products. Such a facility could help to mitigate the consequences of delays in achieving EOI for those products.

1.18   On the Openreach commitments, changes have been made since the Consultation Document that we consider largely address the concerns raised. There has also been good progress on key roadmap elements that stakeholders considered as poorly defined when we consulted. A much clearer change control process, supported by a formal Undertakings obligation, has also been documented and

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[13] Also published today, at
http://www.ofcom.org.uk/consult/condocs/btundertakings/statement/bt_letter.pdf

agreed, with the involvement of the Office of the Telecommunications Adjudicator ("OTA")[14]. In light of feedback from CPs in response to the Consultation Document and through related discussions with Openreach, some additional requirements have been added to the roadmap using the new change control process. This process was employed for the first time at the 26 August OTA Executive meeting and appears to have worked effectively.

1.19   The latest version of the roadmap[15] (together with the changes approved by the 26 August Change Control Board) captures all of the developments that the OTA was expecting to be included at the time that the Consultation Document was published. The OTA and we are satisfied that the final process can provide a robust way to manage the delivery of Openreach's commitments.

1.20   On a number of the proposed exemptions, some CPs opposed the removal of IBMC dates for the products concerned[16]. Those comments are discussed below, where we conclude that the net impact of the variation is limited. A limited number of more specific comments were also received, which we do not consider change the proposals that we made in the Consultation Document. We have therefore agreed to the variation to the Undertakings, subject to a few non-material changes, and the consequential amendments to the existing exemptions outlined in the Consultation Document.

The impact of the changes

1.21   We consider that the additional formal and voluntary measures agreed with BT since the Consultation Document strengthen our conclusion that there would be a limited impact on competition due to the delays in separation. This is because the systems separation and product EOI obligations for June 2014 have been strengthened, and because there is greater certainty that the additional Openreach developments will be implemented as envisaged. Further, we consider that the EAO monitoring of the relevant EOI products with comparable legacy non-EOI downstream products will provide an additional incentive for BT to improve the performance of EOI products provided by Openreach.

1.22   In terms of the impact on consumers, the steps taken in addition to the proposals in the Consultation Document are beneficial, because there are additional measures to accelerate overall business customer migration. Also, more certainty on the additional Openreach developments (through confirmation of the roadmap contents and a robust change control process) gives higher prospects of realising customer benefits in services and competition.

1.23   We also consider that the additional changes made since the Consultation Document provide a greater guarantee that the Undertakings will continue to be a comprehensive solution to the competition problems identified as a result of the TSR. This is both due to the additional measures affecting consumer and competition impacts, as identified above, and the greater level of scrutiny on progress towards customer records separation. We consider that all these factors suggest that our decisions remain consistent with the outcomes that the TSR set out to achieve.

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[14] The OTA is independent of Ofcom and works with Openreach and industry to find solutions to the operational problems with the delivery of Openreach's wholesale products.
[15] For the latest version of the roadmap (dated 9 July 2009), see www.openreach.co.uk/roadmap. It is necessary to register on the Openreach portal to see the roadmap.
[16] Although no respondents disagreed with the granting of the exemptions for Featurenet SRUs, or Messaging Services and Bill Direct

1.24   We consider that the agreed changes to the legal text of the variation, while providing additional clarification, are not material and we therefore do not consider it necessary to consult again. In light of these changes and of our considerations in relation to the other concerns raised by the respondents to the Consultation Document, we have decided that it is appropriate for us to agree to the modified variation and consequential amendments to the existing exemptions. This Statement sets out our considerations that led us to this decision. The legal agreement between BT and us giving effect to the variation is at Annex 3 and the legal wording for the exemptions is at Annex 5.

Section 2

Introduction

Purpose of this document

2.1　This document is about changes to formal obligations that BT has concerning the services it provides in certain fixed telecommunications markets. Those obligations concern the IT systems-related aspects of what are known as the BT Undertakings, This document presents the decisions we have made in this area after reviewing responses to the Consultation Document.

2.2　To simplify this document, we do not reproduce in full detail all the proposals and analysis that we included in the Consultation Document. Readers less familiar with this subject may therefore wish to read this document in conjunction with the Consultation Document to understand the full background to both the changes that we have made and our reasons for making those changes.

2.3　In 2005, BT offered a set of commitments (the Undertakings) to address competition concerns that we had identified in certain markets. The BT Undertakings are a set of obligations on BT that are designed to deliver Equality of Access between BT and its competitors. Equality of Access is broadly based on two fundamental concepts: Equivalence of Inputs and operational separation.

2.4　On Equivalence of Inputs, the Undertakings state that:

'Equivalence of Inputs' or 'EOI' means that BT provides, in respect of a particular product or service, the same product or service to all Communications Providers (including BT) on the same timescales, terms and conditions (including price and service levels) by means of the same systems and processes, and includes the provision to all Communications Providers (including BT) of the same Commercial Information about such products, services, systems and processes. In particular, it includes the use by BT of such systems and processes in the same way as other Communications Providers and with the same degree of reliability and performance as experienced by other Communications Providers.

2.5　The second aspect of Equality of Access, operational separation, is mainly concerned with ensuring that Openreach acts as a separate and independent division within BT. Operational separation includes the effectiveness of 'Chinese Walls' between the different parts of the BT organisation. Such separation is intended to make sure that Commercial Information and Customer Confidential Information (as defined in the Undertakings) are not inappropriately shared across BT, both between Openreach and RoBT or between separate divisions within RoBT. Operational separation also includes the separation of BT's Management Information and Operational Support Systems.

2.6　The creation of Openreach (referred to in the Undertakings as the 'Access Services' division of BT, or 'AS') was a major part of operational separation. The Undertakings required BT to place its access and backhaul assets and operations into Openreach and to separate the operational support systems for Openreach from RoBT.

2.7   The competition concerns leading to the Undertakings were set out in the *Strategic Review of Telecommunications Phase 2 Consultation Document*[17]. We accepted the Undertakings instead of referring those concerns to the Competition Commission. The full Undertakings, and our reasons for accepting them, are set out in full in our publication *Final statements on the Strategic Review of Telecommunications, and undertakings in lieu of a reference under the Enterprise Act 2002*[18].

2.8   We consider that, in general, BT has made good progress towards achieving the Undertakings commitments agreed in September 2005. The majority of product equivalence commitments for current generation products have been met and Openreach is operating largely as a functionally separate entity. The markets and competitive landscape, particularly in the case of broadband, have been transformed. There are now almost 14 million ADSL broadband lines in the UK, with over six million being served by competitors to BT who have invested in their own local infrastructure. We recently published a review of the progress so far in implementing the Undertakings[19].

2.9   BT and the rest of industry nonetheless face new challenges, and circumstances have changed since the time when the Undertakings were agreed. In particular:

-   CPs - Openreach's customers – have expressed ever-increasing demand for new services and improved systems functionality from Openreach to support their continued growth;

    BT has embarked on the initial stages of a programme to upgrade its local network to support higher-speed broadband services over its Next Generation Access ("NGA") network, which will have implications for CPs, consumers and the Undertakings[20]; and

-   Delays in finalising BT's systems separation solution for business customer records, as well as delays in its 21CN programme, have affected the delivery plans for certain Undertakings commitments.

2.10   BT approached us late in 2008 to request a reprioritisation of some of its remaining Undertakings obligations in light of these changed circumstances.

2.11   A further challenge that BT faces is in relation to the separation of its business customer records. BT's strategy for business separation has changed. Partly this is due to the experience that BT has gained through its residential customer migration, which resulted in significant operational and systems issues in the early stages of migration. Also, BT has changed its technical/systems approach for handling business customer migrations. Initially, BT had planned to develop one system for its smaller and medium-sized business customers and one for its larger business customers. However, BT has recently decided that it would be more cost-effective to build a single system to address both customer groups. This decision means that achieving the original separation milestones is no longer realistic.

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[17] See http://www.ofcom.org.uk/consult/condocs/telecoms_p2/
[18] See http://www.ofcom.org.uk/consult/condocs/statement_tsr/
[19] *Impact of the Strategic Review of Telecoms,* at http://www.ofcom.org.uk/telecoms/btundertakings/
[20] For Ofcom's latest publications on BT's NGA developments, see http://www.ofcom.org.uk/consult/condocs/nga_future_broadband/statement/ and http://www.ofcom.org.uk/consult/condocs/fttc/statement/

2.12   BT also explained to us that without a rescheduling of its outstanding Undertakings commitments, it would not be able to accommodate CPs' increasing demands for product and service improvements by Openreach.

2.13   We consider that the fundamental principles of the Undertakings remain relevant and appropriate, both now and in the longer term. However, given the challenges outlined above, and the good progress to date in implementing the Undertakings, we indicated to CPs that we were willing to consider potential changes to BT's systems separation obligations, in combination with certain new commitments to Openreach's customers[21].

2.14   We have since been considering a re-prioritisation of BT's resources. This has covered both a review of the remaining Undertakings obligations on systems separation and associated product-related migration end-dates, and firm new commitments on Openreach to deliver a number of additional industry requirements. As part of this process, we invited the OTA to work with Openreach and its customers to agree a set of priority developments that would help deliver improved services and functionality to Openreach's customers and their end users. Following consultation, this document presents our decision with regard to the resulting variation to BT's Undertakings and our reasons for this decision.

2.15   The Undertakings (section 18.1) allow for BT and Ofcom to agree from time to time to vary the Undertakings. The Enterprise Act requires that Ofcom, in accepting the Undertakings, should "have regard to the need to achieve as comprehensive a solution as is reasonable and practicable to the adverse effect on competition". In considering the case for varying the Undertakings, we have considered the impact on the comprehensive solution to the concerns set out in the TSR.

Structure of this document

2.16   The main parts of this document are as follows:

- Section 3 summarises the proposals and analysis in the Consultation Document, including our assessment of the proposals' impact;

- Section 4 describes the consultation responses and our views on them;

- Section 5 sets out our final decisions on changes to the Undertakings;

- Annex 3 sets out the new legal text for the variation to the Undertakings;

- Annex 4 sets out the legal text of the variation, showing the changes made from the Consultation Document; and

- Annex 5 contains the legal text for the amendments to current exemptions, which arise due to the variation.

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[21] See *Ofcom to consider key IT systems priorities to support the needs of communications providers and BT's ongoing Undertakings commitment,* 8 December 2008, at
http://www.ofcom.org.uk/telecoms/btundertakings/otherdocs/keyIT.pdf

Section 3

Overview of consultation proposals

Introduction

3.1   This section summarises our consultation proposals and the background to why we made them. The key issues covered are:

- changes to systems separation obligations and the implications they have for outstanding product milestones including the WLR3, ISDN2 and ISDN30 milestones;

- consequential amendments to current exemptions to the Undertakings;

- new obligations on Openreach to deliver a set of additional product and service developments considered by its customers to be high priority; and

- our assessment of the impact of these proposed changes on competition, consumers and the Undertakings.

3.2   Section 4 of this document discusses our views on the consultation responses. Section 5 summarises our final decisions and sets out the related impact assessment.

Background on BT's systems separation obligations

Objectives of Operational Separation

3.3   As part of the TSR, we identified competition concerns which we proposed could be addressed through the implementation of what has been termed 'Equality of Access' for all CPs. Equality of Access is made up of two concepts: Equivalence of Inputs to products for CPs and BT, and operational separation for Openreach.

3.4   The term 'operational separation' in relation to the Undertakings means that Openreach has to operate as a separate division within BT, as required by section 5.23 of the Undertakings. If Openreach operates as a separate division it will likely have neither the incentive nor the capability to discriminate against CPs in favour of RoBT. The objective of operational separation is therefore to ensure that the relationship between Openreach and any other CP is as close as possible to the relationship between Openreach and BT's downstream divisions (BT Wholesale, Retail, Global Services).

3.5   A key aspect of Openreach's obligation to be functionally separate from RoBT is its Operational Support Systems (OSS) and Management Information Systems (MIS) separation programme. The rationale for requiring OSS and MIS separation is to ensure that no sensitive, business critical, consumer data can be used to advantage BT's businesses over other CPs. When complete, system separation therefore provides transparency that information held by Openreach is both logically and physically separate from RoBT's divisions. This requirement therefore reduces both the capability and incentive for BT to engage in non-price discrimination between its own business units and other CPs and promotes Equality of Access.

3.6 Although physical separation of systems is often seen as a purely technical task, it also requires rigorous examination of business relationships, interfaces, processes, data and organisations. Those elements are at the heart of running a business and therefore, in the case of BT, encompass what needs to be done to achieve operational separation. Requiring the physical separation of the systems used by Openreach and RoBT helps ensure that the operational separation required by the Undertakings is fully implemented.

3.7 As part of implementing physical separation for OSS, BT therefore put in place a wide reaching business change programme intended to deliver separation not only of systems but also separation in cultural, business, process and organisational terms, representing real operational separation. In addition, physically separating the systems ensures clear interfaces to business functions, enabling greater transparency in monitoring non-price discrimination. It also potentially allows for greater independence for Openreach in managing its IT resources.

BT's approach to physical separation

3.8 BT's approach to separation is to build new physically separate operational systems for Openreach and other BT Lines of Business ("LoBs"), and move data that are currently in shared systems to the new systems. Existing shared systems will be closed or moved to a single LoB. BT's approach is consistent with the regulatory requirements to have separate systems for Openreach[22].

3.9 The programme to implement physical systems separation is large and complex and was therefore expected to take a significant time to complete. During this period there has been, and remains, significant potential for disruption to the customer service experience as data are migrated from old to new systems. Both BT and we have therefore placed considerable emphasis on balancing the speed of separation with minimising the risk of customer disruption.

Levels of systems separation

3.10 Three different levels of separation have been defined:

- **Level 1 – user access controls:** this level of separation allows Openreach and RoBT to share the same applications and data. RoBT users are barred from accessing Openreach functions and data by the use of 'user access controls' that restrict what users can access, based on their role and the organisation they are part of.

- **Level 2 – application and data separation:** this level of separation requires RoBT and Openreach to have separate applications and data. Only Openreach users can access Openreach applications and data and only RoBT users can access RoBT applications and data. This requires the development of new applications or the modification of existing applications, and the migration of data to these separated applications.

- **Level 3 – physical separation:** this level of separation requires that the separated applications and data described in Level 2 run on physically separate hardware and operating systems.

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[22] and to some extent for BT Wholesale

3.11   Ofcom refers to the first two levels as 'logical' separation. Having multiple levels allows some form of separation to be implemented at an early stage while the work to complete full physical separation is completed[23].

Physical separation and Equivalence of Inputs

3.12   The separation of systems shared between Openreach and RoBT also contributes to the delivery of EOI by helping to ensure that CPs receive the same Openreach inputs as RoBT. Until physical separation is achieved, user access controls are designed to enable systems separation for the purpose of delivering EOI.

BT's previous systems separation obligations

3.13   Before the changes described in this document were made, the physical separation requirements on BT under section 5.44 of the Undertakings were to:

- Physically separate Openreach OSS from RoBT by 30 June 2010;

- Design all new Openreach systems to be separate from RoBT;

- In the interim, until full physical separation is achieved, deliver a logically separate OSS capability for certain product groups according to agreed milestones;

- Review regularly with Ofcom a roadmap for achieving physical separation; and

- Implement user access controls and ensure that they are subject to internal, Equality of Access Board ("EAB")[24] and independent audit.

Challenges in delivering separation on current timescales

3.14   The Consultation Document set out in detail BT's challenges in meeting its systems separation milestones[25]. The first challenge arises from the competing demands on Openreach's IT expenditure and resources. One of these is BT's programme to upgrade its local network, to support higher-speed broadband services on its NGA network. There are also many demands from Openreach's customers for new products and service improvements, which also require systems development resources. Openreach's delivery of these new capabilities can provide new ways for CPs to innovate and compete for customers.

3.15   BT's Equivalence Management Platform ("EMP") is used to deliver (most) systems separation, the growing set of CP demands, and new NGA services. The previous plan for developments provided on or through EMP – based on trying to meet all of these requirements - suggested an unacceptable risk that software upgrades (or 'systems releases') introduced using the EMP would be seriously delayed or that the quality of what would be delivered would be jeopardised. The stability of the EMP was also at risk, potentially causing service disruption, which would be to the detriment of all of Openreach's customers. These risks were expected to remain despite Openreach's plans to significantly increase the EMP's delivery capacity to support future systems releases.

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[23] For more detailed definitions, see the Consultation Document at paragraph 3.13.
[24] This is a committee established by BT as part of the undertakings to oversee compliance with them. See: http://www.btplc.com for more information.
[25] See paragraphs 3.16-3.35 of the Consultation Document

3.16   A further challenge to the existing milestones was the time taken by BT to determine its strategy for separating the systems supporting business customers. BT confirmed only in late 2008 that it would have just two systems stacks – one for residential customers and one for all business customers (including Global Services and BT Wholesale). This affected the separation timetable partly due to BT's approach of using per-customer rather than per-product migration of customer records to the new system. This is intended to minimise disruption for larger and more complex customers during the migration process.

3.17   In the context that much progress had already been made in delivering the Undertakings, Ofcom indicated a willingness to consider whether these challenges might justify changes to the remaining Undertakings commitments and, if so, what the specific changes should be.

Summary of the proposed changes to separation obligations

BT's separation obligations before our proposals

3.18   At the time of our proposals, BT's remaining Undertakings obligations on separation related to both the migration of customers using specific products[26], and the separation of physical systems. They are set out in Figure 3.1 below.

Figure 3.1   BT's main systems separation obligations (at May 2009)

Commitment	Type	Milestone
WLR 70% IBMC	Product	30/06/09[27]
WLR full IBMC	Product	30/06/10
ISDN2 full IBMC	Product	31/03/09
ISDN30 full IBMC	Product	31/12/09
90% customer records on separate systems	Systems	30/09/09
Physical systems separation complete	Systems	30/06/10

Proposed new separation obligations

3.19   We proposed changes to both the product and systems obligations on BT. Our proposals are summarised in Figure 3.2 below.

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[26] Those customers using such products at the time that the Undertakings were signed
[27] BT has indicated to us that it expects to achieve 70% migration during September 2009, as envisaged at the time of the Consultation Document. BT attributes this delay mainly due to the need to process the 2008 temporary change in VAT.

Figure 3.2   Proposed new systems separation milestones

Commitment	Level of separation	Milestone
80% customer service records[28]	Level 2	30/06/10
90% customer service records	Level 2	31/12/12
A % of customer service records to be advised[29]	Level 2	30/06/14
Physical systems separation	Level 3	Not specified[30]

3.20   The key details of our proposals were as follows:

- BT would still have to deliver Level 3 (full physical) separation. However, the timing of this would be driven more by pragmatic considerations, such as the timing of the delivery of new systems to support new products, and the replacement of old systems and hardware. Progress towards Level 3 would continue to be overseen by roadmaps and audits of Level 1 controls. BT would also consider separation opportunities at its Design Council[31];

- The focus in the near term would be on achieving significant progress in Level 2 separation. Building on continued separation of customer records at Level 1 separation (user access controls), a number of milestones would be added for Level 2 separation (separate data and applications). The proposed Level 2 milestones extend beyond June 2010 to reflect the extra time needed to deliver a separate business stack as well as the proposed per-customer approach for handling the more complex migration of business customers;

- By June 2010, only a very small number of business customer records will be separated at Level 2. The December 2012 obligation reflects Level 2 separation for about half of business customers. The Level 2 milestone for June 2014 would be advised by BT to Ofcom by no later than the end of 2011, once it is possible to determine realistic targets for migration of the remaining business customer records;

- A tail of business customer records will not achieve Level 2 separation until BT completes its 21CN rollout. This reflects the general proposed approach to migrate customers once all their products can be on separate systems. Some current products will be replaced in due course by other (21CN) products, but the timing for such replacement products is uncertain at present; and

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[28] This includes virtually all residential customers. There is a small tail of complex residential customers who purchase business-like products or legacy products that BT plans to withdraw, and hence will not be supported on the new business stack

[29] BT would advise Ofcom of this percentage by the end of 2011 at the latest

[30] The proposed new obligation under new paragraph 5.44.2 of the Undertakings was that, except for systems exempted under Annex 6, OSS for Openreach would be run physically separate from RoBT when reasonably practicable and proportionate, unless otherwise agreed by BT and Ofcom.

[31] This is a sub-committee of BT's Operating Committee. Its remit includes reviewing the detail of BT's capital spending programmes and reporting on progress on systems separation.

- Until a customer's records achieve Level 2 separation, the applications and data for the EOI products that they use would have the safeguard of Level 1 separation, which will continue to be audited. We also proposed to ask the EAO to monitor key (non-binding) milestones concerning progress in delivering the business stack.

Proposed new product EOI obligations

3.21   We proposed a new measure of progress in respect of product EOI: the percentage of customers - measured by 'legal entities'[32] - that is migrated to using EOI products. This is because, as discussed above, a tail of customers may not be migrated to Level 2 separation for some time. It would therefore not be possible to give clear and meaningful dates for full migration for individual products. The new product EOI milestones that were proposed are shown in Figure 3.3.

Figure 3.3   Proposed new product EOI milestones

Commitment	Level of separation	Milestone
90% legal entities	Level 2	30/06/10
95% legal entities	Level 2	31/12/12
A % of legal entities to be advised[33]	Level 2	30/06/14

3.22   The proposed new measures of product EOI would assess progress in migrating customers across a range of relevant products. We therefore proposed to remove the IBMC measures of progress for individual products such as WLR3, ISDN2 and ISDN30. The Openreach inputs to the products to which IBMC dates no longer apply would be added to the list of 'Measured Products' in the Undertakings[34]. To aid visibility, the six-monthly roadmap reviews of Undertakings progress would continue to monitor progress made in migrating customers who consume products for which IBMC dates would no longer apply.

3.23   We considered that the revised approach to move away from fixed IMBC dates would address BT's breach of an ISDN2 milestone (of 30 March 2009) and that no further action would be required.

Consequential amendments to current exemptions to the Undertakings

3.24   In the Consultation Document, we proposed some detailed changes to current Undertakings exemptions. In limited circumstances, we can grant BT exemptions from specific Undertakings obligations, generally upon request from BT. The need for these exemptions results largely from the proposed changes to systems separation set out above. Delay in BT's rollout of 21CN was also a factor in some cases.

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[32] the Consultation Document - paragraphs 3.56-3.59 - has more explanation of the term 'legal entities'

[33] BT would advise Ofcom of this percentage by the end of 2011 at the latest

[34] The list of Measured Products describes the EOI input products provided by Openreach to enable BT's competitors to provide equivalent products

3.25   In proposing the changes to systems separation obligations, we set out in the Consultation Document that there would also be a knock-on impact on a number of exemptions. This was because those exemptions were based on the original systems separation obligations.

3.26   As set out above, the proposed per-customer migration process implied that for a number of products, it would no longer be appropriate to use the IBMC measure to assess progress in migrating BT's customers to using EOI products. Instead, such progress would be assessed by measuring the proportion of legal entities migrated to using any of a list of Measured Products.

3.27   A number of previously agreed exemptions have a fixed IBMC date which aligns with the current date for full systems separation, namely 30 June 2010[35]. The specific exemptions that would be impacted by this new approach relate to the following BT downstream products:

- Featureline;

- Featurenet;

- Megastream Ethernet;

- Redcare CCTV;

- WaveStream Connect;

- WaveStream Regional; and

- Media and Broadcast.

3.28   In the Consultation Document, we proposed that it was reasonable to accept the likely consequential delay in BT migrating all of its legacy customers for the products listed above to the relevant EOI products. We considered that the related move to a per-customer migration approach would ensure that customers do not experience disruption by having different products supported on different BT systems.

3.29   In the Consultation Document we also proposed amendments to two other exemptions. These were not impacted directly by the move away from IBMC milestones, but needed to be reviewed in the light of either the revised approach towards systems separation or the delays to BT's 21CN deployment. These exemptions were:

- Featurenet SRUs: this exemption depended on out-of-date expectations about when BT would develop its NGN[36]. It was therefore useful to consider changes to the relevant obligation as part of the current process; and

- Messaging Services and Bill Direct: the proposed changes to BT's systems separation obligations implied that a revised exemption was needed.

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[35] The current IBMC date for WaveStream Connect and Wavestream Regional is slightly later, at 30 September 2010.
[36] See *Next Generation Networks: Responding to recent developments to protect consumers, promote effective competition and secure efficient investment*, at http://www.ofcom.org.uk/consult/condocs/ngndevelopments/

3.30   Further details are available in Section 4 of the Consultation Document on the specifics of these detailed exemptions and how we assessed the impact of our proposals on the products concerned.

Proposals for additional Openreach product and service commitments

3.31   As the Consultation Document explained, we informed BT that we were willing to consider some of Openreach's resources being redirected towards developing more of the high priority product and service improvements required by Openreach's customers in the short to medium term, as an integral part of the overall re-prioritisation of BT's Undertakings on systems separation. Openreach subsequently worked with a cross-section of its customers, and the OTA, to define which Openreach developments to prioritise for delivery over the next 18 months.

3.32   At the same time as we published the Consultation Document, Openreach published its full roadmap of developments arising from these discussions. That roadmap was intended to run from the end of 2009 to the end of the fiscal year 2010-11, and cover most of the top priority requirements identified by CPs. It also covered Openreach's business-as-usual product developments.

3.33   Many of the required developments concerned improvements to existing products, processes and systems. Given the constraints on systems development capability, CPs felt very strongly that, apart from a relatively small number of specific product improvements, their top priority was for major improvements to existing products and services. These were required to help improve customer satisfaction and reduce costs of process failures.

3.34   One major area for development was to improve the 'EMP consumption model'. This is about shortening the time between a product being made available on a software release and CPs being able to use the new functionality. Such gaps mean a delay for CPs in using the functionality that they want and a delay for Openreach in recouping its development costs. When looking at products rather than service improvements, each of the product communities (LLU/WLR/Ethernet) identified a relatively small number of mission-critical product improvements. Most of the high priority issues relate to improvements in service to business customers[37]. The OTA-facilitated discussions have also yielded further benefits, by informing and giving added impetus to work that Openreach was already doing to improve its product development and change control processes and how it interfaces with its customers. For example, Openreach has committed to publish a rolling 18-month roadmap of all its product developments – not just those proposed to substitute for systems separation activity. This approach will improve transparency and should provide for better long-term planning for Openreach and its customers.

3.35   We considered it important to obtain a commitment that the Openreach developments would be delivered in practice. We therefore also proposed to introduce some Undertakings requirements on Openreach, described below, for these specific developments.

- Openreach would have to publish a roadmap covering the additional developments, with a forward look period of 18 months; Openreach could make changes to that roadmap only in accordance with tightly defined change control criteria; and

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[37] Figure 3.5 in the consultation document gives some examples of the Openreach developments arising from this process.

- Openreach would have to replace any developments that are removed from the roadmap with others of comparable benefit to its customers. Changes to the roadmap would also need the agreement of Openreach's customers, with OTA facilitation.

The impact of the changes proposed

3.36 The Consultation Document assessed the impact of the proposed changes on consumers and competition. It also assessed the overall impact of the proposed changes on the Undertakings as a comprehensive solution to the competition issues identified in the TSR.

3.37 Below we summarise the Consultation Document's impact assessment. For our detailed assessment, see Section 5 of the Consultation Document.

3.38 In assessing the impacts, the main proposed changes to the Undertakings were:

- Level 2 separation of business customer records would proceed more slowly, especially for larger businesses (i.e., those buying a greater variety of regulated products);

- For some specific Openreach products (those added to the 'Measured Products' list), separation – and therefore also the availability of EOI inputs to BT's retail customers - would occur over a potentially much longer period;

- Level 3 (full physical) separation would develop over a longer timescale, in line with pragmatic considerations rather than prescribed milestones; and

- Openreach would deliver a number of additional developments to its customers (underpinned by commitments on change control).

3.39 In assessing the competitive impact of our proposals, we distinguished the impacts of changes in Level 2 separation; changes in Level 3 separation; and the additional Openreach commitments.

3.40 We considered that there would be a limited impact on competition as a result of the proposed delays in separation, for the following reasons. Firstly, there would still be user access controls to prevent discriminatory behaviour. The reliability of such controls in BT has increased significantly. The EAB's continuing role in monitoring user access controls should help provide further reassurance to Openreach's customers that information-sharing rules are being followed. In addition, the 'data virtualisation' approach should provide a robust degree of Level 2 separation. Further, there would be close scrutiny of BT's progress towards physical separation through regular roadmap reviews.

3.41 The impact on competition also needs to take into account the potential benefits from the proposed changes. We considered that, most immediately, the re-prioritisation of Openreach systems resource on functionality considered as high priority by Openreach's customers should allow for benefits to flow through to competition and consumers in the short term and, due to the nature of some of these developments, also in the longer term. Looking further ahead, we considered that offering more flexibility on the pace of Level 3 separation would be likely to give BT greater ability to respond in a similar way in future and may avoid some fixed costs associated with a firmer Level 3 timetable being passed on to CPs.

3.42   In terms of the impact on consumers, we considered that the proposed approach would be beneficial as it minimises the risk of customer disruption and harm from a potentially poorly implemented customer migration process to separate systems. In addition, customers should benefit from the services and competition supported by the additional Openreach developments.

3.43   In assessing the impact on the Undertakings, we considered whether our proposed changes, and their impacts on competition and consumers, would alter the effectiveness of the Undertakings as a comprehensive solution to the competition problems identified in the TSR. We considered that the Undertakings would remain a comprehensive solution, partly because of the limited consumer and competition impacts identified above.

3.44   Also, we considered that there would still be sufficient momentum towards the operational separation of Openreach from RoBT and the delivery of EOI products, albeit over a longer timescale for some systems and products. In the intervening period, where data and applications are not separated, user access controls would ensure that information is not inappropriately accessed. These would be subject to ongoing scrutiny by the EAB. Further, BT would continue to have the obligation to provide its roadmap for systems separation to us for review. BT's Design Council would also regularly review Openreach's IT strategy to ensure that opportunities for systems separation are properly considered as they arise.

3.45   We also considered that the significant achievements already delivered with the help of the Undertakings meant that the proposed changes would not make a significant difference to the extent to which the Undertakings would constitute a comprehensive solution to the competition problems identified in the TSR. Our view was that our proposals would maintain the significant and continuing progress towards delivering separation and EOI, such that Equality of Access would continue to be safeguarded.

Responses to consultation and further changes agreed with BT

Introduction

4.1 In this section we discuss the points raised in the responses to our consultation and the additional changes that we have agreed with BT since our consultation proposals, in light of those responses and further analysis that we have undertaken. Specifically, we:

- describe the points raised by stakeholders in the written consultation responses and in discussions with us and/or the OTA since the consultation period closed;

- assess those points and present our conclusions and views on the issues raised; and

- summarise our overall conclusions, highlighting changes that we have agreed with BT as a result of issues raised in consultation responses.

4.2 The analysis in this section focuses on the two main concerns raised in consultation responses, which were:

- delays in achieving EOI for individual products, and the consequent competitive impact; and

- weaknesses in the clarity and content of the additional Openreach developments, as well as imprecision in the related change control process.

4.3 We received eight responses to the Consultation Document, of which one was wholly confidential. Further details are provided in Annex 1.

4.4 In response to the points raised in consultation, we have secured a number of further changes and commitments from BT. We set out these changes as we cover the points raised by stakeholders.

Comments on Ofcom's overall approach

4.5 A number of stakeholders recognised the potential value of re-prioritising BT's resources towards delivering requirements of higher industry priority. However there was also some opposition in principle to relaxing BT's Undertakings commitments. Some stated that the Undertakings were being eroded through insufficiently transparent discussions between BT and Ofcom. Some also stated that economic conditions and BT's resource constraints (including BT's planned NGA investment) were irrelevant to whether it could meet its Undertakings obligations. Some also believed that improvements in Openreach products (WLR3 parity with WLR2) or service (the EMP consumption model) should be made before any relaxation of the Undertakings could take place. There were few direct comments on the specific proposal to extend the timeframe for full (Level 3) physical separation, although Cable and Wireless suggested that to be a reasonable compromise, given the anticipated delivery of additional Openreach developments.

4.6   Ofcom has adopted a full, open and transparent consultation process in relation to the proposed variation. There have been intensive discussions about potential changes to the Undertakings and the proposed shorter-term commitments from Openreach to its customers. Indeed, we publicly announced early on in the process that it was willing to consider a potential trade-off between separation requirements and additional Openreach developments, and that industry would be consulted in due course[38]. This triggered the process of engagement between the OTA and Openreach's customers to agree a set of additional Openreach commitments. That work was followed by the Consultation Document.

4.7   Further, we do consider that economic conditions and resource constraints are on this occasion among the relevant considerations. Had we instead taken a firm stance that the scarce systems development resources should be used to meet regulatory requirements, Openreach would have been in a position to put less resource into the product and service developments than its customers have indicated that they want. We considered it appropriate to consider trade-offs between Undertakings commitments and delivering greater functionality to CPs, partly in light of the overall progress that BT has made in implementing the Undertakings to date, which is significant[39]. For example, there are now over six million broadband lines based on LLU.

4.8   The suggestion that we should require Openreach to deliver some of the proposed industry developments before its separation commitments can be relaxed is also, we consider, unlikely to be practical for anything other than small changes. This is because delivering the additional Openreach developments will consume systems resources which would otherwise be required to deliver systems separation. Whilst we by no means welcome the need to re-prioritise resources in this way, we consider that it is a valid exercise, aimed at securing the best outcomes for consumers and industry but without abandoning the central objectives of the Undertakings.

The removal of IBMCs and the impact on EOI

4.9   A number of respondents expressed significant concern about the proposed change in how progress towards EOI would be measured. They were concerned that removing the IBMC measure would delay and damage equivalence, and so harm competition. Cable and Wireless stated that the delays could specifically affect products for which competition is the highest. UKCTA suggested that a fuller impact assessment was needed of the resulting impact on competition.

4.10   There were concerns that losing the IBMC 'backstop' measure would threaten the delivery of equivalence in terms of pricing, products and service levels. The more specific concern was expressed that, in the absence of EOI, other CPs could not know what practical problems were occurring that might disadvantage them. Cable and Wireless said that this particularly applied to the fibre-based products, the copper-based ones being subject to non-discrimination requirements based on SMP.

4.11   Some respondents did not see why there was necessarily a link between the changes in systems separation targets and the delivery of EOI. Cable and Wireless referred to Ethernet already being provided to all customers on an EOI basis and

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[38] See *Ofcom to consider key IT systems priorities to support the needs of communications providers and BT's ongoing Undertakings commitment,* 8 December 2008, at
http://www.ofcom.org.uk/telecoms/btundertakings/otherdocs/keyIT.pdf
[39] *Impact of the Strategic Review of Telecoms,* at http://www.ofcom.org.uk/telecoms/btundertakings/,
also published on 29 May, is our latest review of Undertakings implementation

therefore questioned the need for per-customer, rather than per-product, migration to EOI.

4.12 A number of suggestions were made about how to tackle these problems. It was asked whether it was possible to achieve product EOI even if customer records are not separated. UKCTA suggested that we should review the availability of legacy products. The possibility of other CPs accessing BT's legacy systems was also raised. The use of tactical IS systems was suggested to deliver equivalence in the short term for those products with exemptions that were affected by the proposed delays in separation. Also, a change of wording to the Undertakings was suggested to clarify that all non-systems aspects of EOI should still be delivered by the original 30 June 2010 deadline.

4.13 Cable and Wireless expressed another concern with delays in achieving EOI, which was that it can be difficult to transfer from buying non-EOI products to buying EOI inputs. This point was made specifically with respect to Wavestream.

Ofcom's response

4.14 In the Consultation Document, we presented an analysis of the competitive impact of the proposed changes. For example, we quoted the proportions of BT's business revenues accounted for by the bulk products which we proposed should no longer have IBMC dates. We still consider the findings of that analysis to be valid and that it provides persuasive support for the proposed changes. We acknowledge, however, that stakeholders expressed clear concerns of a more detailed nature about the potential impact on competition in relation to specific products. We have therefore collected further information in order to present a fuller description of the impacts involved.

General comments

4.15 The first point that we would re-iterate is that it is important to consider the impact of the additional Openreach developments alongside the impact of any delays in delivering systems separation and product EOI. A number of consultation respondents, by contrast, commented on the different parts of the proposals in isolation, not as a package. We consider that this does not allow for a full and proper assessment of the proposals. We also note that few comments were made on the high-level impact assessment that we presented in the Consultation Document, which analysed that balance of impacts.

4.16 Also, it is important to recognise that supply to new customers of BT's downstream divisions is now provided on an EOI basis for all of these products. For all of the products affected by the removal of IBMC requirements, Ready for Service ("RFS") dates were achieved by the start of 2009. For example, ISDN2 and ISDN30 achieved RFS by September 2007 and February 2008 respectively. The focus of our analysis is therefore on the legacy installed BT customer base, and the degree to which delays in achieving EOI are avoidable and, if not, have a material impact on competition.

4.17 In terms of whether delays in achieving EOI can be avoided, it is important to understand that there is an inevitable link between delays in achieving (Level 2) systems separation and achieving EOI. Whilst a proportion of BT's downstream customer records continues to be held on legacy systems, BT's downstream divisions will process all their order handling, fault management etc through the legacy systems rather than using the EOI Openreach systems. In process terms,

therefore, the strategic solutions for systems separation and the achievement of EOI are very clearly linked.

4.18 Further, we do not consider stakeholders' suggestions for interim solutions to achieve EOI to be practical or desirable. The example of Ethernet EOI provision quoted above is based on BT downstream using tactical systems. However, we do not consider that the use of such tactical EOI systems for more widespread achievement of EOI is a practical or desirable alternative. Partly, this is because such systems and processes cannot satisfactorily cope with the much higher volume of customers and range of products involved. Building and integrating new systems for the specific short-term use of low-volume products is also higher in terms of the per-customer costs involved. The additional complexity involved in less sophisticated tactical systems also risks a worse consumer experience. Further, this would essentially lead to a two-step migration process (first onto the tactical system and then onto the strategic business stack) which would be inefficient, would carry a greater risk of disrupting end customers, and would extend the timeframe for migration to the ultimate, long-term systems solutions.

4.19 Also, the suggestion that other CPs should access BT's legacy systems in order to get the same processes is undesirable as it would be technically complex and costly. This is one of the main reasons why the focus of the migration work, to this point, has been on moving customers to EOI systems rather than to legacy systems. Access to BT's legacy systems would also form a significant departure from the expectation set out during the TSR that EMP would become the key platform for all CPs (BT and its competitors) to transact with Openreach. Further, the legacy BT systems were designed when BT was a vertically integrated company and in order for these to become accessible by external customers, there would need to be significant further systems development, which would be a largely retrograde step for the industry as a whole. The materiality of the differences in processes is also relevant to this issue, and we discuss that further below.

The impact of not using IBMC dates

4.20 We consider that the significance of the loss of IBMC dates for the relevant products is the key issue to assess. The first point to note is that the new obligations for achieving EOI, whilst not relating to individual products, will require significant progress to be made on those individual products with high volumes. The December 2012 milestone of 95 per cent EOI will not be achieved if BT does not migrate a significant proportion of its legacy customer base of WLR, ISDN2 and ISDN30 customers to its new business stack. BT would also need to essentially complete its residential customer migration to EOI systems by June 2010 in order to meet the 90 per cent milestone at that date. In the case of WLR, BT has already migrated over half of BT Retail's legacy base to WLR3. This provides BT with incentives to complete that migration and to ensure that the WLR3 product is fit for purpose.

4.21 Recognising respondents' concerns, however, we have proposed and BT has agreed to make a stronger commitment on the June 2014 Undertakings milestones for customer separation and EOI. BT has agreed a change to the legal text underpinning its commitment for customer separation by the end of June 2014, such that it has committed itself to "demonstrate continued *significant* progress towards the migration of business customers" over and above the obligations for December 2012. We would therefore expect this revised milestone to demonstrate material progress towards complete EOI. This requirement should avoid a situation in which there is only minimal progress towards complete product EOI, and notably should encourage

BT to deliver more substantial progress towards EOI for the larger volume products affected by the removal of IBMC dates.

4.22 We consider that it is not desirable to fix a firm percentage for customer separation now in the absence of more detailed work and progress towards the building of BT's business stack. We continue to be of the view that the precise percentages of customer records separation should only be fixed once BT has built its business stack and can make a meaningful commitment to specific milestones. However, the change to the legal Undertakings text that we have agreed with BT subsequent to CP response to the consultation recognises our expectation that the June 2014 milestones should represent material progress beyond the 2012 commitments on separation and product EOI.

4.23 We now turn to more detailed comments at the level of the individual products for which we proposed that IBMC dates will no longer apply. We have looked in detail at information from BT and Openreach about the processes, performance outcomes and contractual conditions associated with the legacy end-to-end products provided from BT downstream relative to the relevant EOI product inputs provided out of Openreach.

4.24 In terms of processes and performance outcomes, we (supported by the OTA) have looked, at detailed information comparing EOI and non-EOI / legacy supply of individual voice products, namely WLR analogue, ISDN2 and ISDN30. In particular, we have compared the EOI inputs that Openreach now provides with the relevant end-to-end products that BT downstream provides (which are not currently subject to an EOI obligation). We have looked at performance measures covering installation times, early life fault rates, fault repair times and repeat fault rates. Our analysis suggests that CPs are not materially disadvantaged and, in many respects, the EOI products delivered from Openreach perform better and are better specified (for example, by supporting KCIs[40]).

4.25 Figure 4.1 provides details of the key product performance characteristics between the EOI and non-EOI products for some of the lower volume products that are likely to be impacted by the proposed changes. Figure 4.1 effectively compares the characteristics of the relevant EOI product inputs from Openreach to the comparable downstream products based on legacy non-EOI systems and processes.

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[40] KCIs (or "keeping customers informed") is a facility by which CPs are automatically alerted by Openreach's systems as to the status of orders, fault repairs, etc.

Figure 4.1 Comparison of EOI and BT legacy product performance

EOI product input	Non-EOI Downstream product	Provisioning lead times*	Fault repair times	Keep Customer Informed (KCI) availability	SLAs	SLGs
Optical Spectrum Services (OSA) and Optical Spectrum Extended Access (OSEA)	Wavestream Connect and Regional	▪ EOI product has a standard 57 and 90 working day lead time on new circuits supplied using Adva and Nortel/Ciena technologies respectively. This is broadly aligned with the non-EOI product of 60 working days.**	▪ Both the EOI and non-EOI products have a 5hr service restoration capability. ▪ Unlike the EOI product, the non-EOI product has no remote fault diagnostic capability	▪ EOI product tracks key provisioning times using KCIs from order acceptance through to circuit handover. KCIs are not available on the non-EOI product	▪ The EOI product is backed by SLAs. These are applied to key provisioning (Customer Delivery Date (CDD) and repair measures (service restoration). Where these are missed they trigger compensation payments ▪ Openreach does not provide SLAs on the non-EOI input and there is no associated compensation mechanism. The non-EOI retail service relies on 'best endeavours' to meet the standard provisioning times ▪ Where BT retail offer SLAs on commercial terms these are the same for the non-EOI product as they are for the EOI product	Provisioning SLGs are lost on the EOI product CPs under-forecast (SLGs on repair are unaffected though) ▪ Openreach does not provide SLGs on the non-EOI input ▪ Where BT retail offers SLGs on commercial terms these are the same for the non-EOI product as they are for the EOI product
CCTV Access	Redcare CCTV	▪ EOI product has a standard 57 working day lead time on new supply. This is broadly aligned with the non-EOI product (60 working days for retail non-EOI). However, the EOI product has more favourable provisioning timescales for internal building supply shifts and regrades	▪ EOI product has a 5hr service restoration capability. The non-EOI product has a 72hr service restoration commitment based on 'best endeavours. ▪ Unlike the EOI product, the non-EOI product has no remote fault diagnostic capability	▪ EOI product tracks key provisioning times using KCIs from order acceptance through to circuit handover. KCIs are not available on the non-EOI product EOI product has improved levels of service assurance and availability over that offered by the non-EOI product. The	▪ The EOI product is backed by SLAs. These are applied to key provisioning (Customer Delivery Date (CDD) and repair measures (service restoration). Where these are missed they trigger compensation payments ▪ Openreach does not provide SLAs on the non-EOI input and there is no associated compensation mechanism. The non-EOI retail service relies on 'best endeavours' to meet the standard provisioning times	▪ Provisioning SLGs are lost on the EOI product where CPs under-forecast (SLGs on repair are unaffected though) ▪ Openreach does not provide SLGs on the non-EOI input ▪ Where BT retail offer SLGs on commercial terms these are the same for the non-EOI product

EOI product input	Non-EOI Downstream product	Provisioning lead times*	Fault repair times	Keep Customer Informed (KCI) availability	SLAs	SLGs
				EOI product also provides the capability to offer independent helpdesk services to the end user. The non-EOI product only offers helpdesk services through BT.	▪ Where BT retail offer SLAs on commercial terms these are the same for the non-EOI product as they are for the EOI product	as they are for the EOI product
Broadcast Access	Media and Broadcast	▪ EOI product has a standard 57 working day lead time on new supply. This is nearly twice the time of non-EOI supply (30 working days)***	▪ The EOI and non-EOI products have the same 5hr service restoration capability. ▪ EOI and non-EOI fault systems offer broadly similar capabilities and availability	▪ EOI product tracks key provisioning times using KCIs from order acceptance through to circuit handover. KCIs are not available on the non-EOI product	▪ The EOI product is backed by SLAs. These are applied to key provisioning (Customer Delivery Date (CDD) and repair measures (service restoration). Where these are missed they trigger compensation payments ▪ Openreach does not provide SLAs on the non-EOI input and there is no associated compensation mechanism. The non-EOI retail service relies on 'best endeavours' to meet the standard provisioning times ▪ Where BT downstream offer SLAs on commercial terms these are the same for the non-EOI product as they are for the EOI product	▪ Provisioning SLGs are lost on the EOI product where CPs under-forecast (SLGs on repair are unaffected though) ▪ Openreach does not provide SLGs on the non-EOI input ▪ Where BT retail offer SLGs on commercial terms these are the same for the non-EOI product as they are for the EOI product

Notes: * All Provisioning lead-times are subject to survey.** All Non-EOI Wavestream Connect and Regional circuits, regardless of technology, are supplied on a 60 working day lead time. As part of the survey activity, where non-EOI circuits are supported on the same technology as the EOI variant (OSA circuits provided using Nortel technology for example) BT expect to provision those circuits to broadly the same lead time as the EOI variant. *** The differential in provisioning lead times between EOI and non-EOI products is explained by the fact that Media and Broadcast owns and supplies the terminal equipment for all legacy products. This means that, for those new circuits that are added under existing contracts, BT is able to reduce the provisioning lead time, although as noted all lead times are subject to survey.

4.26 To put more focus on any potential differences in performance for EOI and non-EOI supply, BT has agreed to our request that the key performance metrics mentioned above should be reported on to, and monitored by, the EAO. These reports from Openreach will cover the high-volume products for which performance monitoring is more meaningful. For the more niche products, such comparison would not be statistically significant. The products for which performance will be monitored include WLR Analogue, ISDN2 and ISDN30. With effect from January 2010, and until a significant degree of migration to the business stack has occurred, the EAB will consider in its meetings the extent to which there are material differences between the EOI and Classic-supported downstream end-to-end products. We consider that this arrangement will place a greater onus on Openreach to deliver as good a performance on products purchased by other CPs relative to that delivered to BT's legacy downstream customers (who are supported on BT Classic).

4.27 This new arrangement is in addition to plans already agreed with BT to report separately on progress with migrating individual products, as part of the regular Undertakings roadmap reviews with us. Those roadmap reviews should be a useful means of providing visibility concerning the more niche, fibre-based products.

4.28 In addition, to provide more assurance that BT's new separation milestones will be achieved, BT has agreed to report to the EAO on additional non-binding milestones concerning progress in developing its business stack. The idea of these non-binding milestones was discussed in the Consultation Document, and they have now been confirmed[41]. BT will report progress in building the business stack, against targets for the start of the operational trial; initial live deployment; the start of trial migration; and the start of volume migration. BT will also report to us on what this implies for the migration of product groupings, covering the building of relevant systems capabilities as well as trial and live migration dates.

4.29 We have also considered the implications of losing IBMC milestones in terms of differences in commercial terms. For the copper-based products – ISDN, WLR, LLU[42] – there are other existing regulatory obligations stemming from BT's designated significant market power status. Those obligations include a requirement to not unduly discriminate in the terms of supply, including pricing. That obligation should provide some assurance to CPs, partly due to the related requirement to publish reference offers for SMP products.

4.30 For the fibre-based products, the proposed extension of EOI potentially has a greater impact, as it is theoretically possible for BT to achieve its revised customer separation commitments without migrating customers who purchase these lower-volume products. The (BT downstream) products involved are:

- Megastream Ethernet;

- Redcare CCTV;

- WaveStream Connect;

- WaveStream Regional; and

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[41] See the side letter from BT that is also published today, at http://www.ofcom.org.uk/consult/condocs/btundertakings/statement/bt_letter.pdf

[42] Which can be an input into a Featurenet service

- Media and Broadcast.

4.31 However, as some of these products have only recently become available on an EOI basis, there are in some cases no customers currently taking the EOI variant of these products although orders may be in the pipeline. This illustrates why any comparison of performance metrics between the EOI and legacy products would not be statistically meaningful at the present time.

4.32 It is also worth noting that a number of these products are in decline and are gradually being replaced by new products. For example, BT has confirmed to us that there has been no new supply of Megastream Ethernet since 2006.

4.33 Nevertheless, having considered the relevant product characteristics of the EOI product inputs relative to the non-EOI legacy downstream products (as summarised for various products in Figure 4.1), we have concluded that there are no material differences. We have also attempted to mitigate the impact on CPs and customers that might be more affected by delays in EOI. Firstly, in our stakeholder discussions, we have also been told that a potentially significant issue is that other CPs cannot easily transfer their contracts to EOI fibre-based products from non-EOI ones, and pay a higher price in the meantime for a downstream end-to-end product. As a result we have asked Openreach to consider how it might make it easier to migrate those contracts. Openreach has agreed to consult with its customers on whether there is demand for this and, where there is demand, to migrate individual circuits using its 'novations' process[43]. Another mitigating factor is that there are a number of business-related developments included in the additional Openreach commitments which are an integral element in the overall re-prioritisation package. We consider that those developments should provide significant benefits to set against any consequences from delays in achieving EOI.

4.34 In summary, we consider that the impact of delays in EOI should be limited, in particular for individual products with large volumes, as BT will need to have migrated a very significant proportion of its customers consuming these products to the relevant EOI products in order to meet its revised customer separation milestones as agreed under this Variation. We also consider that the impact for the more niche products is limited because:

- there are currently limited differences between the EOI and non-EOI variants of these products and in some respects the EOI products are better;

- in most cases these products are legacy products that have declining volumes or are being replaced by new product variants (such as EOI-based Ethernet products); and

- Openreach has agreed to consult with its customers with a view to easing the migration of those customers consuming legacy / non-EOI products to the relevant EOI product variants.

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[43] Details of novations process can be found at, http://www.openreach.co.uk/orpg/products/cpp/novations.do. While this is the method of transfer that Openreach intends to employ in transfers, a retail customer may discuss with Openreach the migration of any of its circuits from the retail non-EOI product to available EOI products. Those migrations are therefore not limited to contractual novations.

The additional Openreach commitments

4.35   Stakeholders raised a number of concerns in their consultation responses about the robustness and certainty around the Openreach commitments, which we cover below. Concerns raised include the following:

- It was not clear exactly what developments were included in the final roadmap of commitments offered by BT in return for some relaxation on systems separation milestones. Some stakeholders pointed to differences between lists in Openreach documents, in OTA minutes, and in our Consultation Document (albeit that the latter only covered some examples of products in the roadmap rather than the complete list);

- Some specific important developments should be included in the roadmap, whereas others that were included should not be considered as additional but as business-as-usual;

- Some of the developments, such as the EMP consumption model, were not set out in enough detail at the time of the Consultation Document; and

- The change control process governing the delivery of the commitments was not yet clear, and in practice may not be meaningful.

The contents of the Openreach roadmap

4.36   On the general point of clarity of the roadmap contents, we note that there appear to have been some weaknesses in Openreach's communication to customers, which has led to some confusion. However, the final roadmap has now been produced, and the OTA has confirmed to us that it contains everything that it expected to be included at the time that the Consultation Document was published.

4.37   The roadmap is available to view in full on Openreach's website[44]. Openreach has published an overall Product Development Roadmap (to be updated each quarter) which incorporates details of *all* of its planned product developments. These include the additional commitments introduced through this re-prioritisation exercise. Those are identified specifically as the Openreach Industry Commitments ("OICs").

4.38   We can confirm that certain specific product developments which some stakeholders were concerned may have been missing are included roadmap as part of the OICs, rather than Openreach's business-as-usual developments. These elements that are within the OICs are TDM Access and Backhaul[45]; Management of complex directory entries and special phonebook entries on WLR3 ('Tempo 1019')[46]; and Partial re-numbering scenarios ('Tempo 1131')[47].

4.39   Concern was also raised in response to the Consultation Document about the delivery of one other Openreach development: Electronic Interface for Order and

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[44] For the latest version, dated 9 July 2009, see www.openreach.co.uk/roadmap. It is necessary to register on the Openreach portal to see the roadmap.

[45] This was included in the roadmap that was current at the time of the Consultation Document

[46] Openreach agreed to introduce a tactical solution into its 'R1200' release, subject to completion of feasibility. This change was approved by Change Control Board on 26 August 2009.

[47] This requirement has been brought forward from EMP R1400 to R1300 (Q4 09/10). This change was approved by the Change Control Board on 26 August 2009.

Fault tracking. For clarity, that development has now been delivered, although not as part of the OICs but as part of Openreach's business-as-usual developments[48].

4.40   The point that some elements should be considered as business-as-usual developments, rather than as commitments specific to this package of developments, was made by the FCS and SSE. The developments referred to were data integrity, documentation and improvements to the EMP consumption model. We disagree with that view, for two reasons. Firstly, the views put forward by FCS and SSE do not recognise that Openreach is unlikely to have committed resource to work on these developments on a business-as-usual basis (at least in the near to medium term), especially if systems separation requirements were not relaxed. Secondly, these developments were clearly identified by Openreach's customers as important priorities, following the engagement of many CPs with the OTA. Fixing the EMP consumption model was seen as important by a number of CPs. UKCTA's consultation response in fact considers that a new EMP consumption model should be in place before any relaxation of separation requirements.

4.41   More broadly, the FCS and SSE also stated that there was little in the package for WLR customers. The FCS considered that most of the proposed delays on BT's systems separation obligations related to WLR, and that some Openreach capacity should be directed to dealing with necessary WLR improvements over the next few years. We disagree with this perspective. We note that a number of the further developments will benefit WLR customers as well as other customers. The extra resource being put into developments on data integrity, documentation and service harmonisation are examples of this. It is true that the package of measures agreed between Openreach and its customers includes a number of developments that are specific to the business market. However, this was on the valid basis that the proposed delays in systems separation relate essentially to business consumers. It should be noted, however, that WLR is also used to supply business consumers. Also, the Undertakings have already delivered substantial benefits for residential consumers, many of whom use WLR.

4.42   Further, comparative information that BT has shared with us on Openreach's performance between EOI and non-EOI WLR variants does not suggest that the proposed relaxation of separation commitments for WLR customers should be seen as a significant concern. The fact that over half of BT Retail's WLR legacy supply has migrated to the EOI product also provides incentives to complete that migration and to ensure that the WLR3 product is fit for purpose. In conclusion, we do not consider that the WLR community would be disadvantaged by the proposals.

4.43   The suggestions that some of the roadmap elements were insufficiently defined related to documentation, the EMP consumption model, and data integrity. We accept that the definition of those items was limited when the Consultation Document was published. However, CPs chose to include those requirements in the list of developments in the knowledge that they were in the early stages of definition. We do not therefore consider it valid to claim that imprecise definition of those items is a reason to question the package of proposals. We consider UKCTA's suggestion that there should be no relaxation of BT's separation commitments until a new EMP consumption model is delivered to be a challenging argument. This is because the primary reason for considering a reprioritisation of BT's systems related Undertakings is the resource issues arising from competing demands.

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[48] Openreach has recently launched a new electronic interface for this capability, which is being trialled by a few CPs – see http://www.openreach.co.uk/orpg/news/generalbriefings/gen08609.do

4.44   However, stakeholders should be reassured by the progress that has been made in developing more detail on these three elements since we published the Consultation Document. On documentation, there have been three scoping workshops and approval from Openreach's investment board was expected in September 2009. On the EMP consumption model, five recommendations have been agreed for implementation and there are two other options being considered, one of which was due to be discussed further in September 2009. On data integrity, detailed work has been progressed within the four key areas identified as separate projects. Developments on all of these areas will be reported on through the OTA Executive. Further details provided by the OTA on this work are summarised in Annex 2.

4.45   One other point was made about the contents of BT's roadmap. The SSE recommended that we establish a single industry commercial group, referenced in the Undertakings, to input into and have visibility of Openreach's IT development spending priorities. Whilst we support transparency from Openreach, the developments covered in this consultation process are just a sub-set of Openreach's work. They will take place over a limited time period and are, we believe, governed by a proportionate change control process (see below). We do not therefore consider it appropriate to require a formal mechanism on Openreach for these developments, or to require one for developments outside the scope of this variation. We note, however, that this process has provided Openreach with a valuable opportunity to examine both its product prioritisation and development processes and should have helped to inform the future evolution of its end-to-end 'C2M' customer relationship programme.

Change control process

4.46   Some respondents stated that the change control process governing the delivery of the Openreach commitments was not clear enough when the Consultation Document was published. UKCTA added that because the developments could change due to industry or Openreach requirements, there could be no meaningful Undertakings relating to these commitments.

4.47   We accept that the change control process was not well-defined at the time of the Consultation Document. Our consultation, however, was more focused on consulting on the principle of the need for a robust process. This is something that those stakeholders who commented on change control did support. We disagree with UKCTA's assertion that the Undertakings commitments on change control may be meaningless. This is because we consider that a formal obligation will strengthen the change control process. That process, facilitated by the OTA, should also be robust by enabling developments of equal value - in the eyes of Openreach's customers – to replace any items from the original roadmap that are no longer seen as such high priority.

4.48   Further work on the change control process has now been undertaken by Openreach and the OTA. The change control process was employed for the first time at the 26 August OTA Executive meeting and appears to have worked well.[49] At that meeting, some additional requirements were tabled as proposed changes to the roadmap, in the light of feedback from CPs captured in reaction to the Consultation Document and following further related discussions with Openreach. These changes were

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[49] As noted in paragraph 3.83 of the Consultation Document, Openreach has already taken decisions at its own risk to commit resources before knowing the outcome of our consultation process. That process involved the production of the original roadmap of developments. The change control process has now been applied to that in order to manage effectively the changes from that initial roadmap.

approved at that meeting by the Change Control Board[50]. The changes will be reflected in the next version of the roadmap (which is due to be updated in October 2009).

4.49   The OTA has reported to us that it now considers Openreach's change control process to be well-defined. A much clearer process has been documented and agreed, and shared with a number of CPs prior to being finalised. The OTA and we consider that the process can provide a robust way to manage the delivery of Openreach's commitments. Industry should, we believe, also take confidence from the role that the OTA will have in the change control process. The process description will soon be made available on Openreach's website.

4.50   Some key elements of the change control process are that:

- The OTA2 Executive will need to authorise any change requests (i.e., through a monthly change control board, chaired by the OTA and attended by all stakeholders);

- Ofcom arbitration will be sought in exceptional circumstances;

- Existing industry fora will be engaged with, so CPs are fully involved in decisions; and

- Processes will be managed alongside Openreach's new C2M (Concept to Market) process to ensure consistency and alignment.

The consequential amendments to existing exemptions

4.51   Our proposals to amend a number of existing exemptions to the Undertakings are referenced in paragraphs 3.24-3.30 above. They are described in detail in Section 4 of the Consultation Document, which complements the analysis below.

4.52   A number of broader comments from stakeholders on the exemptions were made that opposed an end to IBMC dates. Those comments have already been discussed above, where we conclude that the net impact of that change is limited. A limited number of more specific comments were also received in consultation responses about the proposed amendments to the exemptions. We include these more specific comments in discussing each of the exemptions below.

4.53   It should be noted that the revised approach to systems separation set out in the variation necessitates the consequential changes to the exemptions due to the removal of IBMC dates.

Featureline

4.54   Featureline is a downstream BT product that takes analogue voice rental, ISDN2 or ISDN30 as an input. New supply is already available on an EOI basis from Openreach. Achieving IBMC for BT's legacy customer base effectively means that the downstream product would take a WLR3 input from Openreach.

4.55   UKCTA, Cable and Wireless and TSI (Ireland) Ltd opposed an end to the removal of the IBMC. SSE also opposed such a removal, if it gave BT Retail a competitive

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[50] Two of these changes are referenced at paragraph 4.38 above, and a third concerns work on Service Harmonisation.

advantage. BT, and the Connect and CWU response, both supported the amendment to the exemption.

4.56 Having considered responses to the consultation, we have decided to grant this amended exemption to BT. Our reasons are as follows:

- CPs are able to compete with BT downstream by purchasing the EOI inputs which are available from Openreach;

- As highlighted above, we do not consider that there is any material disadvantage to CPs consuming the relevant EOI inputs from Openreach relative to the comparable downstream products that Featureline is based on (i.e., analogue voice, ISDN2 and ISDN30 based on BT Classic); and

- Further, BT and Ofcom have now agreed that the EAO will monitor the performance of the EOI telephony products provided by Openreach relative to the performance of the comparable end-to-end products delivered by BT downstream. This will give transparency of any material differences and should also incentivise BT to improve the quality of its EOI products where this falls short of that of its downstream products.

4.57 We therefore consider that the amendment to the exemption should be granted as there is no evidence of material competitive harm and the monitoring role of the EAO should help allay any concerns CPs may have regarding potential discrimination between internal and external supply of this product.

Featurenet

4.58 UKCTA and Cable and Wireless opposed an end to the removal of the IBMC. SSE also opposed such a removal, if it gave BT Retail a competitive advantage. BT, and the Connect and CWU response, both supported the amended exemption. The FCS also saw no reason not to agree with the removal of the IBMC milestone. No other specific comments were received opposing this amendment to the exemption.

4.59 This exemption concerns Featurenet delivery over copper, but excludes the way in which wiring to SRUs is provided which is dealt with under a separate exemption (see paragraphs 4.75-4.76).

4.60 An EOI input into copper based Featurenet has been available since 1 July 2008 and is based on bulk MPF. As stated in the Consultation Document, since the RFS date, approximately 60 per cent of Featurenet orders have been met using EOI inputs. Nevertheless, given the new approach to customer migration to EOI products, we consider that maintaining a fixed IBMC date is no longer appropriate.

4.61 We conclude that the exemption should be amended as proposed. Firstly, we consider that CPs who wish to compete against BT's downstream businesses in delivering Featurenet like services have access to the EOI inputs from Openreach. Secondly, Featurenet is a legacy product likely to decline in volume over the next few years as customers migrate to Voice over Internet Protocol ("VoIP") solutions. Indeed, BT has said that it does not plan to support Featurenet under Project Sustain which is BT's programme for keeping the legacy voice network running longer, given the revision of BT's 21CN voice strategy. BT expects that its downstream customers will increasingly migrate to VoIP-based solutions supported by Ethernet provided on an EOI basis. We therefore consider that it is disproportionate to maintain a fixed

migration milestone for legacy Featurenet customers to be migrated to an EOI based Featurenet service.

Megastream Ethernet

4.62   UKCTA and Cable and Wireless opposed an end to the removal of the IBMC. SSE also opposed such a removal, if it gave BT Retail a competitive advantage. No other specific comments were received opposing this amendment to the exemption. BT, and the Connect and CWU response, both supported the amended exemption.

4.63   As set out in the Consultation Document, the scope of the amended exemption concerns a small proportion of the existing installed base who use a non-EOI product called ASDH2 (Access Synchronous Digital Hierarchy Stage 2).

4.64   We consider that this exemption should be amended as proposed. This reflects our decision to withdraw the IBMC requirement for this product, on the basis set out above. We consider the competitive impact of the revised exemption to be negligible as the volumes of these circuits are rapidly declining and forecast to reduce to zero in 2012. BT has confirmed that there has been no new non-EOI supply of these products since 30 September 2006. New provisions are made using Ethernet EOI inputs from Openreach. We therefore consider it disproportionate to maintain a fixed date by which BT needs to have migrated its legacy base to using EOI inputs when the legacy base is declining rapidly based on organic churn off this legacy product.

Redcare CCTV

4.65   UKCTA and Cable and Wireless opposed an end to the removal of the IBMC. SSE also opposed such a removal, if it gave BT Retail a competitive advantage. No other specific comments were received opposing this amendment to the exemption. BT, and the Connect and CWU response, both supported the amended exemption.

4.66   We conclude that this exemption should be amended as proposed. Our reasons are that:

- New customer supply is available on an EOI basis;

- Having compared the non-price characteristics of the EOI product variants to those provided by BT downstream[51], it does not appear that the EOI product variants are inferior to those supplied internally on an EOI basis[52]; and

- As part of our roadmap monitoring of BT's system separation programme, we will be looking at what progress BT is making at the individual product level.

4.67   Nevertheless, we acknowledge that CPs who currently rely on the legacy product variant and wish to migrate to the relevant EOI product should be able to do so easily. Consequently, Openreach has agreed to consult with its customers on whether there is demand for providing a migration path to the EOI CCTV Access product variants in the absence of a defined IBMC date. If demand exists, Openreach will take reasonable steps to complete the migration activities as soon as is

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[51] E.g., provisioning lead times, fault repair times
[52] Note that the EOI product based on Nortel has longer lead times, but the EOI products support KCIs which the legacy products do not

practicable , using its novations process and based on similar terms and conditions as currently published for its novation and change of ownership offerings[53].

WaveStream Connect and Wavestream Regional

4.68   UKCTA and Cable and Wireless opposed an end to the removal of the IBMC. SSE also opposed such a removal, if it gave BT Retail a competitive advantage. No other specific comments were received opposing this amended exemption. BT, and the Connect and CWU response, both supported the amended exemption. Cable & Wireless also commented in its submission that BT was making it very difficult for it to move off old solutions and buy the EOI product directly from Openreach, causing it to pay more than it should.

4.69   Wavestream Connect and Wavestream Regional are the downstream BT products that are used to provide very high bandwidth, dedicated, point to point data using fibre systems. The EOI components to these downstream products are Optical Spectrum Access (OSA) and Optical Spectrum Extended Access (OSEA) respectively. Since January 2009, all Wavestream Connect and Regional circuits are available from Openreach on an EOI basis.

4.70   We conclude that these exemptions should be amended as proposed. Our reasons are as follows:

- New customer supply is available on an EOI basis;

- Having compared the non-price characteristics of the EOI product variants to those provided by BT downstream[54], it does not appear that the EOI product variants currently supplied are inferior to those supplied internally on a non-EOI basis[55];

- As part of our roadmap monitoring of BT's system separation programme, we will be looking at what progress BT is making at the individual product level; and

- If we were not to amend the exemption, and BT were to withdraw the product, end customers would suffer.

4.71   Nevertheless, we acknowledge that CPs who currently rely on the legacy product variant and wish to migrate to the relevant EOI product should be able to do so easily. Consequently, Openreach has agreed to consult with its customers on whether there is demand for providing a migration path to the OSA and OSEA EOI Wavestream variants, in the absence of a defined IBMC date. If demand exists, Openreach will take reasonable steps to complete the migration activities as soon as is practicable, using its novations process and based on similar terms and conditions as currently published for its novation and change of ownership offerings[56].

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[53] as published at http://www.openreach.co.uk/orpg/products/cpp/novations.do
[54] E.g., provisioning lead times, fault repair times
[55] In fact the EOI products support KCIs which the legacy products do not
[56] as published at http://www.openreach.co.uk/orpg/products/cpp/novations.do

Media and Broadcast

4.72   UKCTA and Cable and Wireless opposed an end to the removal of the IBMC. SSE also opposed such a removal, if it gave BT Retail a competitive advantage. No other specific comments were received opposing this amended exemption. BT, and the Connect and CWU response, both supported the proposed exemption.

4.73   We conclude that this exemption should be amended as proposed. Our reasons are as follows:

- New customer supply is available on an EOI basis;

- Having compared the non-price characteristics of the EOI product variants to those provided by BT downstream we note that in some respects the EOI product inputs are better than the legacy non-EOI downstream products, while in others the legacy products are superior. Nevertheless, we observe that in the case of the EOI product, Openreach provides SLAs and SLGs, whereas it does not do so for the legacy internal supply. Also, BT's downstream products offer the same SLAs and SLGs regardless of whether they are based on an EOI product input or on legacy non-EOI internal supply. It is, therefore, our view that CPs are not materially disadvantaged.

- As part of our roadmap monitoring of BT's system separation programme, we will be looking at what progress BT is making at the individual product level.

4.74   Nevertheless, we acknowledge that CPs who currently rely on the legacy product variant and wish to migrate to the relevant EOI product should be able to do so easily. Consequently, Openreach has agreed to consult with its customers on whether there is demand for providing a migration path to Media & Broadcast EOI product variants in the absence of a defined IBMC date. If demand exists, Openreach will take reasonable steps to complete the migration activities as soon as is practicable, using its novations process and based on similar terms and conditions as currently published for its novation and change of ownership offerings[57].

Featurenet SRUs

4.75   BT, and Connect and the CWU agreed with this amended exemption. Cable and Wireless also agreed, subject to Featurenet being provided on an EOI basis in all other respects. It noted that this exemption was more about delays to BT's 21CN deployment than systems separation delays. FCS also saw no reason to not agree with this exemption. There were no other comments on the amended exemption.

4.76   This amended exemption was not related directly to the move away from using IBMC milestones, therefore these are the only relevant comments made in response to the consultation proposals. Noting that these comments are favourable, we conclude that it is appropriate to amend the exemption as proposed. Cable and Wireless's caveat about EOI supply of Featurenet is in effect considered within our decision to end IBMC dates for Featurenet.

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[57] as published at http://www.openreach.co.uk/orpg/products/cpp/novations.do

Messaging Services and Bill Direct

4.77   BT, and Connect and the CWU agreed with this amended exemption. FCS also saw no reason to disagree with the amendment. There were no other comments on the proposed exemption.

4.78   This amended exemption was not related directly to the move away from using IBMC milestones, therefore these are the only relevant comments made in response to the consultation proposals. Noting that these comments are favourable, we conclude that it is appropriate to amend the exemption as proposed.

Other issues

4.79   One stakeholder stated that the absence of Openreach from Northern Ireland, where there was no operational separation obligation, was having a substantive competitive effect on the development of the wholesale market. This issue is out of the scope of the current consultation exercise and so is not considered further. However, we do continue to monitor the impact of the TSR in the UK.

4.80   We have made a couple minor typographical changes to the legal text, which are not substantive nature. These are highlighted in the mark-up version provided at Annex 4.

4.81   We have also made a minor change to the date by which Openreach has to publish its roadmap. This has now been set for "on or before 30 September 2009" as opposed to the variation text in the Consultation Document (for Undertakings paragraph 5.51.1), which would have required Openreach to publish the roadmap "on or before 30 June 2009".

Section 5

Summary of decisions

Introduction

5.1   In Section 4 we assessed the responses to consultation and gave our conclusions on the specific points made. In this section we

- summarise the decisions we have made;

- highlight the additional changes made, in response to points raised by stakeholders, since we published the Consultation Document; and

- set out our updated impact assessment on our decisions.

Systems separation obligations

5.2   BT's new obligations on systems separation are set out in Figure 5.1.

Figure 5.1   New systems separation milestones

Commitment	Level of separation	Milestone
80% customer service records[58]	Level 2	30/06/10
90% customer service records	Level 2	31/12/12
A % of customer service records to be advised[59]	Level 2	30/06/14
Physical systems separation	Level 3	Not specified[60]

5.3   These new obligations involve:

- A continuing obligation to deliver Level 3 (full physical) separation, albeit on a timing that is driven more by pragmatic considerations;

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[58] This includes virtually all residential customers. There is a small tail of complex residential customers who purchase business-like products or legacy products that BT plans to withdraw, and hence will not be supported on the new business stack

[59] BT would advise Ofcom of this percentage by the end of 2011 at the latest. The 2014 figures are supposed to "demonstrate continued *significant* progress towards the migration of business customers" beyond the December 2012 levels.

[60] The new obligation under new paragraph 5.44.2 of the Undertakings is that, except for systems exempted under Annex 6, OSS for Openreach will be run physically separate from RoBT when reasonably practicable and proportionate, unless otherwise agreed by BT and Ofcom.

- A number of new milestones for Level 2 separation (separate data and applications), extending beyond June 2010. The Level 2 milestone for June 2014 will be advised by BT to us by no later than the end of 2011, once it is possible to determine realistic targets for migration of the remaining business customer records, and BT would have to demonstrate significant further progress relative to the December 2012 milestone;

- A tail of business customer records not achieving Level 2 separation until BT completes its 21CN rollout and some current products are replaced; and

- Continuing Level 1 controls, subject to audits, on applications and data for the EOI products used, until a customer's records achieve Level 2 separation.

5.4   The wording of BT's commitment concerning the June 2014 milestone for customer separation has been strengthened. BT is now obliged to "demonstrate continued ***significant*** progress towards the migration of business customers" over and above the obligations for December 2012. This should help to ensure that BT achieves a high level of customer records separation by this date and hence substantial progress towards IBMC for the larger volume products affected by the removal of IBMC dates, particularly the voice telephony products (WLR analogue, ISDN2 and ISDN 30).

Product EOI obligations

5.5   On product EOI, the new formal obligations are shown in Figure 5.2.

Figure 5.2   New product EOI milestones

Commitment	Level of separation	Milestone
90% legal entities	Level 2	30/06/10
95% legal entities	Level 2	31/12/12
A % of legal entities to be advised[61]	Level 2	30/06/14

5.6   There is a new measure of progress on product EOI: the percentage of customers - measured by 'legal entities'[62] - that is migrated to using EOI products. The new product EOI measures assess progress in migrating customers across a *range* of relevant products. As BT supports more of those products on its business stack, it will be able to migrate any customers whose products are then all supported by that stack. In this way BT will complete a higher percentage of migration against the new measure.

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[61] BT would advise Ofcom of this percentage by the end of 2011 at the latest. The 2014 figures are supposed to "demonstrate continued ***significant*** progress towards the migration of business customers" beyond the December 2012 levels.

[62] The Consultation Document - paragraphs 3.56-3.59 - has more explanation of the term 'legal entities'

5.7   As with the systems separation milestone, the wording of BT's commitment concerning the June 2014 product EOI milestone has been strengthened, to require that the progress beyond December 2012 is 'significant'. We would therefore expect this revised milestone to demonstrate material progress towards complete EOI. This requirement should avoid a situation in which there is only minimal progress towards complete product EOI, and notably will provide added pressure towards product EOI for the larger volume products.

5.8   With the new measure of product EOI in place, the IBMC measures of progress for individual products such as WLR3, ISDN2 and ISDN30 are now removed. The Openreach inputs to the products to which IBMC dates no longer apply are now part of the list of 'Measured Products' in the Undertakings[63]. That list describes the EOI input products provided by Openreach to enable BT's competitors to provide equivalent products. These products (and the associated BT products that consume them and are relevant to this Undertakings variation) are listed in Figure 5.3[64].

Additional measures on separation and product EOI

5.9   We have agreed with BT a number of measures since the Consultation Document to complement the formal Undertakings commitments. Most of these have been made to increase transparency:

- Openreach will report to the EAO on a quarterly basis, from January 2010 at the latest, on key performance metrics comparing EOI and non-EOI/legacy supply. Measures will cover installation times, early life fault rates, fault repair times and repeat fault rates. The relevant (high-volume) products covered include WLR Analogue, ISDN2 and ISDN30. We consider that this will place pressure on Openreach to deliver broadly equivalent performance to CPs and those BT downstream customers depending on non-EOI inputs). This additional reporting and monitoring has been agreed between BT and us subsequent to comments made in responses to the consultation;

- BT will report to the EAO on a number of non-binding milestones to track progress in developing its business stack[65]. Details have been confirmed since this was discussed in the Consultation Document. There will be targets between the start of operational trials and the start of volume migration; and

- Related to the previous point, BT will report to us on what its progress in building the business stack implies for expected migration of specific product groupings to that new system. This complements plans already agreed with BT for reporting on actual progress in migrating individual products, as part of the regular Undertakings roadmap reviews with us. These measures should give useful extra visibility on progress with the more niche, fibre-based products.

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[63] The list of Measured Products describes the EOI input products provided by Openreach to enable BT's competitors to provide equivalent products

[64] Note that the Consultation Document incorrectly explained that certain of the BT downstream products would be part of the Measured Products list. It is only the Openreach inputs to the relevant products that are part of the Measured Products list. The incorrect references were for Wavestream Connect and Wavestream Regional, Media and Broadcast, and Redcare CCTV, being mentioned at paragraphs 4.51, 4.62 and 4.68 respectively.

[65] See the relevant BT side letter, also published today, at http://www.ofcom.org.uk/consult/condocs/btundertakings/statement/bt_letter.pdf

Figure 5.3   Changes to the Measured Products list

BT downstream product	Openreach input on Measured Products list	Previously on the Measured Products list?
Retail line rental	Wholesale Analogue line rental	Yes
ISDN2	Wholesale ISDN2 Line rental	Yes
ISDN30	Wholesale ISDN30 Line rental	Yes
Featurenet	LLU Multiple MPF (also known as bulk MPF)	No
Redcare CCTV	CCTV Access	No
WaveStream Connect	Optical Spectrum Access	No
WaveStream Regional	Optical Spectrum Extended Access	No
Media and Broadcast	Broadcast Access	No
Featureline	Wholesale Analogue line rental	Yes
Megastream Ethernet[66]	Wholesale Extension Service	Yes

5.10   A further measure that Openreach has agreed is to consult with its customers on whether there is demand from those customers consuming legacy/non-EOI fibre-based products to migrate to the relevant EOI product variants. This is intended to address a point raised in stakeholder discussions that other CPs cannot easily make such transfers, and pay a higher price in the meantime. If demand exists, Openreach will take reasonable steps to complete the migration activities as soon as is practicable, using its novations process and based on similar terms and conditions as currently published for its novation and change of ownership offerings[67].

Recent breaches of the Undertakings

5.11   Consistent with the removal of IMBC dates, we consider that the variation addresses BT's breach of an ISDN2 milestone (of 30 March 2009) and that no further action is necessary.

5.12   We also note that BT expects that during September 2009 it will have migrated at least 70% of its installed WLR analogue end user base to the EOI product We noted in the consultation document that BT may not achieve this IBMC interim requirement by the 30 June 2009 milestone.

5.13   Note that there were some other breaches of the Undertakings since the Consultation Document was published. We note that these occurred but that, as a

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[66] Megastream Ethernet is the currently exempted product. Its successor products consume the Wholesale Extension Service input on an EOI basis.

[67] as published at http://www.openreach.co.uk/orpg/products/cpp/novations.do

result of the variation in respect of section 5.44.3, they are no longer applicable. These breaches concerned:

- Section 5.44.3 (c) requirement to ensure that BT it is Ready to Mass Migrate Customer Side Records where those records relate to Featureline by 30th June 2009 (i.e. in the period prior to the completion of OSS physical separation required in section 5.44.2);

- Section 5.44.3 (e) requirement to ensure that 50% of all Supply Side Records relating to the WES, BES, WES-BP, WES-LA and WEES held on OSS shared between Openreach and the RoBT are migrated to physically separate Operational Support Systems by 31 May 2009; and

- Section 5.44.3 (i) implement physically separate OSS for users within BT divisions other than Openreach who access OSS to deal with manual exception tasks for WLR, WLR Digital (ISDN2 and 30) supply functions. These physically separate Operational Support Systems must be available for first use by 31 May 2009.

Openreach commitments

5.14   Openreach is now required under the Undertakings to implement the range of additional developments agreed in the course of OTA-facilitated discussions with its customers. That roadmap runs from the end of September 2009 to the end of the fiscal year 2010-11. Full details of the roadmap are available to view on Openreach's website[68]. Openreach has published an overall Product Development Roadmap (to be updated each quarter) which incorporates details of *all* of its planned product developments. These include the additional commitments introduced through this re-prioritisation exercise. Those are identified specifically as the Openreach Industry Commitments ("OICs").

5.15   For the avoidance of doubt, the roadmap does include as OICs certain developments that stakeholders were concerned may have been missing. These are TDM Access and Backhaul; Management of complex directory entries and special phonebook entries on WLR3 ('Tempo 1019'); and Partial re-numbering scenarios ('Tempo 1131'). In addition, Electronic interface for Order and Fault tracking has already been delivered by Openreach as a business-as-usual development. In addition, since the Consultation Document there has been good progress in developing more detailed definitions of three of the broad roadmap developments to which Openreach is committed - Documentation, the Consumption Model, and Data Integrity.

5.16   The Undertakings variation also means that Openreach can make changes to the specific OIC items in that roadmap only in accordance with a specified change control process, required by the Undertakings. Since the Consultation Document was published, the change control process for the OICs has been completed, documented and employed for the first time at the OTA Executive meeting of 26 August 2009, where it seems to have worked well. At that meeting, some additional requirements were tabled as proposed changes to the roadmap, in the light of feedback from CPs captured in reaction to the Consultation Document and following further related discussions with Openreach. These changes were approved at that

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[68] See www.openreach.co.uk/roadmap. It is necessary to register on the Openreach portal to see the roadmap.

meeting by the Change Control Board[69]. The changes will be reflected in the next version of the roadmap (which is due to be updated in October 2009).

5.17 Key elements of the process include the need for OTA2 Executive authorisation for any change requests, and appropriate engagement with existing industry fora. Openreach is also required by the Undertakings to replace any developments that are removed from the roadmap with others of comparable benefit to its customers. The OTA has reported to us that it now considers Openreach's change control process to be well-defined. The OTA and we consider that the process can provide a robust way to manage the delivery of Openreach's commitments. Industry should, we believe, also take confidence from the role that the OTA will have in the change control process. The process description will soon be made available on Openreach's website.

5.18 Note that we have also made a minor change to the date by which Openreach has to publish its roadmap. This has now been set for "on or before 30 September 2009" as opposed to the variation text in the Consultation Document (for Undertakings paragraph 5.51.1), which would have required Openreach to publish the roadmap "on or before 30 June 2009".

Consequential changes to the exemptions to the Undertakings

5.19 We have decided to amend the exemptions as proposed in the Consultation Document. These amendments to the exemptions flow directly from the fact that BT is no longer able to achieve complete systems separation by 30 June 2010, as well as the delays to the development of certain 21CN products. This has generated the attendant need to change the approach to assessing future separation progress. Given it is no longer appropriate to use IBMC as the form of measurement to judge BT's progress in meeting its functional separation commitment we have needed to examine the previously agreed time limited exemptions that were tied to the final 30 June 2010 IBMC date. The effect of amending these exemptions to a Measured Product basis is outline below:

- **Featureline**: since June 2008, BT has used an EOI (WLR Analogue) input to compete with other downstream CPs that are using the same common set of EOI inputs to offer differentiated services. Rather than requiring the IBMC for Featurenet circuits of 30 June 2010 (IBMC) the revised exemption now allows BT to continue to supply Featureline services using non-EOI inputs and processes until its OSS are fully separated, assuming that new technology does not serve to supplant the product in the interim;

- **Featurenet**: since July 2008, BT has used an EOI (LLU Multiple MPF) inputs to compete with other downstream CPs that are already using the same common set of inputs. The revised exemption no longer requires BT to migrate its Featurenet circuits by 30 June 2010. It now allows BT to continue to supply those non-EOI Featurenet services using its non-EOI integrated systems until its OSS are fully separated. This provides BT with scope to develop effective replacements to its legacy voice platforms and the flexibility to enable BT to develop a 21CN based EOI Featurenet equivalent;

- **Megastream Ethernet:** since September 2006, BT has supplied new Megastream Ethernet customers on an EOI basis (WES). The revised exemption

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[69] Two of these changes are referenced at paragraph 4.38 above, and a third concerns work on Service Harmonisation.

no longer requires BT to migrate its Megastream Ethernet ASDH2 (Access Synchronous Digital Hierarchy Stage 2) circuits by 30 June 2010 (IBMC). Rather, it allows BT to continue to supply the small, and quickly declining (projected by BT to be zero in 2012), number of non-EOI circuits using the broadly similar non-EOI inputs until its OSS are fully separated;

- **Wavestream Connect and Regional:** since January 2009, BT has used EOI (Optical Spectrum Access (OSA) Openreach's Optical Spectrum Extended Access (OSEA) respectively). The revised exemption now no longer requires BT to migrate its installed base for both of these Wavestream products by 30 September 2010 (IBMC). It now allows BT to continue to supply those Wavestream services using the broadly similar non-EOI inputs until its OSS are fully separated;

- **Media and Broadcast:** since January 2008, BT has used an EOI (Broadcast Access) input to compete with other downstream CPs that are already using the same common input. The revised exemption now no longer requires BT to migrate its installed base of existing Media and Broadcast customers to the EOI variant by 30 June 2010 (IBMC). Instead, it provides for BT to continue to supply those Media and Broadcast services using its broadly similar non-EOI inputs until its OSS are fully separated.

- **Redcare CCTV:** since April 2008, BT has used an EOI (CCTV Access) input for all new supply. Rather than requiring the IBMC for Redcare CCTV of 1 July 2010, the revised exemption provides for BT's continued supply of Redcare CCTV services using non-EOI integrated systems until OSS is fully separated:

- **Featurenet SRU cabling**: since July 2008, BT has used an EOI (LLU Multiple MPF) as the method of SRU connectivity in BT exchange buildings. The revised exemption now no longer requires BT to dispense with its non-EOI use of an intermediate Handover Distribution Frame (HDF) in SRU connectivity by 1 July 2010. Instead, it allows BT to continue to use intermediate SRU connectivity for its installed customer base until its OSS are fully separated. In doing so, it gives BT flexibility in developing any 21CN based Featureline variant, as discussed above; and

- **Messaging and Bill Direct:** the exemption allowed BT to access Openreach systems, using BT Operate, for the implementation of these products, contrary to the requirements of EOI until 30 June 2010, after which time now no manual non-EOI intervention would be permitted. The revised exemption permits BT's to continue to support Messaging and Bill Direct by accessing, in a small number of cases, Openreach's systems. In the same way as in the past, User Access Controls and additional senior-level reviews continue to apply.

Minor changes to legal text

5.20   We have made a couple minor typographical changes to the legal text, which are not substantive nature. These are highlighted in the mark-up version provided at Annex 4.

5.21   The only other minor change to the Undertakings text as proposed in the Consultation Document is described above in paragraph 5.18.

Implementing the new obligations

5.22 The legal wording implementing the changes to the Undertakings is set out in Annex 3 in the case of the variation to the Undertakings, and Annex 5 in the case of the exemptions. Annex 4 is a marked up version of the variation to the Undertakings, highlighting the changes that have been made.

Final impact assessment

5.23 The impact assessment ("IA") in the Consultation Document (Section 5) stated that we considered there to be a limited impact on competition as a result of the proposed changes. We stated that the consumer impact should be beneficial. We also stated that the overall impact of the proposed changes maintained the Undertakings as a comprehensive solution to the competition issues identified in the TSR. We do not reproduce the full analysis here, but instead focus on the differences since we consulted.

5.24 As set out above, we consider that the changes made since the Consultation Document proposals provide for stronger formal obligations on systems separation and product EOI and tighter commitments on Openreach. Through greater transparency on product performance and progress towards customer migration, we consider that BT will have the right incentives to complete a significant proportion of its separation programme in a timely manner.

5.25 In assessing the competitive impact of our proposals, we distinguished in the Consultation Document IA between the impacts of changes in Level 2 separation; changes in Level 3 separation; and the additional Openreach commitments. In that IA, we suggested that there would be a limited impact on competition as a result of the proposed delays in separation. We consider that the changes made since the Consultation Document only serve to strengthen that conclusion. This is because the Level 2 systems separation obligation for June 2014 has been strengthened, and because there is more certainty that the additional Openreach developments will be implemented as we envisaged when we consulted. Further, we consider that the EAO monitoring of the relevant EOI products alongside comparable legacy non-EOI downstream products will place an additional incentive on BT to strive for continuous improvement in the performance of EOI products provided by Openreach. We note that few stakeholders made comments on the delay in Level 3 separation or its impact.

5.26 In terms of the impact on consumers, we also consider that the changes made since the Consultation Document suggest a more beneficial outcome. This is partly because there are additional measures to encourage better progress on business customer migration. Also, the greater certainty about the additional Openreach developments suggests a stronger prospect of realising the customer benefits in terms of services and competition.

5.27 In conclusion, we consider that this variation to the Undertakings has only a limited competition impact, and we consider that impact to have been further reduced as a result of changes made in light of the response to the Consultation Document. We also consider that the consumer benefits are now more certain, and the effectiveness of the Undertakings undiminished, as a result of the changes made since we consulted.

Annex 1

Responses to consultation

Responses received

A1.1   We received eight responses, of which one was wholly confidential.

A1.2   The non-confidential responses were from

- BT;

- TSI (Ireland) Ltd;

- Cable & Wireless (C&W);

- Scottish and Southern Energy (SSE);

- UK Competitive Telecommunications Association (UKCTA);

- Federation of Communications Services (FCS); and

- Connect and the Communications Workers Union (CWU).

A1.3   All non-confidential responses are published on our website, at
http://www.ofcom.org.uk/consult/condocs/btundertakings/responses/.

Annex 2

Progress on specific Openreach developments

Introduction

A2.1 This annex briefly discusses progress in defining three elements of the additional Openreach commitments. This information is provided in response to concerns expressed in some responses to the Consultation Document, that these items were not yet sufficiently clear.

Documentation

A2.2 The scope of the programme is to review and substantially improve all elements of Openreach documentation that is required to be consumed by CP's. This will range from Product definition and details through to systems and service information. The project was re-launched on 1 July 2009 with a target completion date of October 2010 whereupon it will become business as usual. Key milestones include investment board approval in mid-September 2009 and end of development stage in April 2010 ready for implementation. Progress to date has mainly been in the running of three collaboration workshops to establish the full scope of the project and to agree stakeholder requirements at a detailed level.

A2.3 The detailed management of these programmes will be reported and managed through the OTA Executive as part of the Openreach commitments to industry.

A2.4 OTA2 reports good progress to date.

Consumption Model

A2.5 The scope of the programme is to implement EMP Technical Architecture changes and EMP customer testing capabilities to make it easier for CP's to selectively consume new products, amendments and functionality economically. A collaborative technical forum was launched in April 2009 which developed five recommendations to be implemented over EMP Release R1300 and R1400 timescales – March 2010 to late spring/early summer 2010. A further two options have a mixed level of support from CP's and will be investigated further via the technical interface forum.

A2.6 At the initial business buy-in forum on 2 July 2009, CP's requested further detail around one of the recommended options and more detail on the impact to the Openreach release strategy. This information is being collated and will be presented to the second business buy-in forum targeted for mid-September 2009.

A2.7 The detailed management of these programmes will be reported and managed through the OTA Executive as part of the Openreach commitments to industry.

A2.8 OTA2 reports good progress to date.

Data Integrity

A2.9 The scope of this programme is to robustly improve the data integrity of key information used by CP's to, provide, change and manage service through Openreach systems. Four key areas have been identified as separate projects; Improve Data Quality of MLC (Managed Line Characteristics) for LLU, Improve Ethernet Radial Distance Results, Improve Accuracy of Tie Pair Reconciliation Report and Improve Success of MAC Generation process. Detailed work has been progressed with some solutions identified to be included in R1200 and 1300 for three of the projects and the fourth (non EMP release specific) within the same timescales. Data cleanse work has been underway since early 2009 and overall the projects are due to complete early to mid-2010.

A2.10 The detailed management of these programmes will be reported and managed through the OTA Executive as part of the Openreach commitments to industry.

A2.11 OTA2 reports good progress to date.

Legal text of the variation

Variation of the Undertakings given to Ofcom by BT pursuant to the Enterprise Act 2002 – Variation Number 20

Variation related to reprioritisation of BT's remaining Undertakings commitments on information systems separation.

WHEREAS:

(a)   British Telecommunications plc ("BT") has given Ofcom certain undertakings (the "Undertakings") which took effect on 22 September 2005, pursuant to the Enterprise Act 2002;

(b)   By virtue of section 18.1 of the Undertakings BT and Ofcom may from time to time vary and amend the Undertakings by mutual agreement;

(c)   BT and Ofcom have agreed to vary the Undertakings as hereinafter appears.

NOW THEREFORE:

It is hereby agreed between BT and Ofcom pursuant to section 18.1 of the Undertakings that the Undertakings are varied as follows:

1.   **Definitions and interpretation**

   1.1   Words or expressions in this Agreement have the same meaning as in the Undertakings.

   1.2   References in this Agreement to section numbers are references to section numbers in the Undertakings.

2.   **Products and Services supplied by Access Services**

2.1.   Section 5.44 is deleted and replaced with,

   "5.44 BT shall:

   5.44.1   ensure that all its Operational Support Systems designed for AS are designed on the principle of separation from the rest of BT systems except for those Operational Support Systems listed in Annex 6, in accordance with section 5.44.6;

5.44.2   ensure that:

(a) its Operational Support Systems, other than those Operational Support Systems listed in Annex 6, will be run physically separate for AS and the rest of BT when reasonably practicable and proportionate, unless otherwise agreed between BT and Ofcom;

(b) by 30 June 2010:

i)   at least 90% of BT's relevant installed End-User base shall be migrated so that the products that this base purchases, that consume the Measured Products, do so on an EOI basis from AS; and

ii) at least 80% of BT's Customer Side Records relating to the Measured Products held on Operational Support Systems shared between AS and the rest of BT are migrated to at least Level 2 System Separation;

(c) by 31 December 2012:

i)   at least 95% of BT's relevant installed End-User base shall be migrated so that the products that this base purchases, that consume the Measured Products, do so on an EOI basis from AS; and

ii) at least 90% of BT's Customer Side Records relating to the Measured Products held on Operational Support Systems shared between AS and the rest of BT are migrated to at least Level 2 System Separation;

(d) by 31 December 2011 or within six months of the date of the completion of the migration of the BT business stack, whichever is the earlier, Ofcom is advised of the further increased percentage migrations of both the relevant installed End-User base and BT's Customer Side Records to be achieved by 30 June 2014 to demonstrate continued significant progress towards the migration of business customers to separate Operational Support Systems;

(e) that the implementation and ongoing application of the obligations in relation to Customer Side Records in section 5.44.2 is:-

    i) subject to regular audits by BT's internal audit group;

    ii) subject to an audit commissioned by the EAB on an ongoing basis at least every 24 months from 30 June 2010;

(f) for the purpose of this section the Measured Products shall additionally include the AS EOI products CCTV Access, Optical Spectrum Access, Optical Spectrum Extended Access, Broadcast Access and Bulk MPF existing as at 1 April 2009 (and as they may evolve, be developed or replaced (whether under the aforementioned or new names) from time to time);

5.44.3 until such time as an Operational Support System is physically separated, and unless otherwise agreed between BT and Ofcom:-

(a) implement User Access Controls for Operational Support Systems capability to the extent it supports the Equivalence of Inputs products of Wholesale Analogue Line Rental, Shared Metallic Path Facility and Metallic Path Facility by 30 June 2007, the Equivalence of Inputs product of Wholesale ISDN2 Line Rental by 30 September 2007 and the Equivalence of Inputs product of Wholesale ISDN30 Line Rental 29 February 2008;

(b) ensure that it is Ready to Mass Migrate Customer Side Records where those records relate to the consumption by Residential Customers of PSTN voice telephony products by 31 March 2008;

(c) ensure that 50% of all Customer Side Records relating to the Measured Products held on Operational Support Systems shared between AS and the rest of BT are migrated to physically separate Operational Support Systems by 30 November 2008;

(d) in calculating the percentage in section 5.44.3 (c) include those Customer Side Records already separated since 30 June 2006;

5.44.4   review on a regular basis with Ofcom achievement on a roadmap for the separation referred to in sections 5.44.1, and 5.44.2;

5.44.5   ensure that the implementation and ongoing application of the User Access Control requirement referred to in section 5.44.3 (a) and section 5.44.6 is:-

(a)   subject to regular audits by BT's internal audit group;

(b)   subject to an audit commissioned by the EAB (in the exercise of its function under section 10.9) in relation to User Access Controls for Operational Support Systems capability to the extent it supports the Equivalence of Inputs products of Wholesale Analogue Line Rental, Shared Metallic Path Facility and Metallic Path Facility; such audit to commence as soon as reasonably practicable after 30 June 2007 and to be completed including having the outcome agreed by the EAB by 31 December 2007 unless otherwise agreed with Ofcom and the outcome of such audit to be shared with Ofcom in writing no later than 15 working days after its completion;

(c)   subject to an independent, external audit focussing on risk assessment, solution design, implementation assessment and ongoing controls to be completed by 30 June 2008; and

(d)   subject to an additional independent external audit in the period between the completion of the audit referred to in 5.44.5 (c) and 30 June 2010 focussing on the ongoing application of User Access Controls and thereafter on an ongoing basis every 24 months from 30 June 2010; and

5.44.6   unless and insofar as an alternative solution is agreed with Ofcom, on or before 30 June 2010:

(a)   implement User Access Controls to those Operational Support Systems listed in Annex 6 that contain Physical Layer Information or Service Level Information such that access to that information is limited to BT employees:-

i)   working for AS; or

ii)   working for BT Operate or BT Design to ensure the efficient
design, planning, building, configuring, management,
maintenance and removal of the Access Network, BT's
Backhaul Network and BT's other electronic communications
networks, efficient network incident management and
resolution, or for the provision of Transmission Layer assets
utilised by AS in the provision of its products; or

iii) who are nominated individuals (if any), or individuals occupying
the roles and functional areas (and their relevant external
advisers, subcontractors and agents) listed in Part A and Part B
of Annex 2.

For the avoidance of doubt AS shall be responsible for and control
the Physical Layer Information contained in those Operational
Support Systems listed in Annex 6.

(b)   ensure that where there is an operational need for BT people other
than those referred to in sub-section (a) to access Service Level
Information contained in an Operational Support System listed in
Annex 6 that the information shall only be accessed via a physically
separate Operational Support System and BT shall implement User
Access Controls to such Operational Support Systems;

(c)   the EAB shall carry out periodic checks on a quarterly basis, unless
BT and Ofcom agree in consultation with the EAB to extend the
periodic review interval up to a maximum of 6 months, to monitor
access to the Operational Support Systems listed in Annex 6, in
accordance with sub-paragraphs (a) and (b) above, to ensure that
there was a valid reason for access. The EAB will also, at the same
time, confirm the total number of users who have accessed the
Annex 6 systems at that specific time and report this figure to
Ofcom."

2.2. The following new section is inserted into the Undertakings after section 5.50:

"AS Product and Service Roadmap and Commitments

5.51 AS shall:

    5.51.1   publish on or before 30 September 2009:

        a)   a 18 month AS roadmap which will establish the timing and content of the product and service developments and enhancements to existing products (the "Roadmap"); and

        b)   a document specifying the change control process (the "Change Control Process") that applies to the Roadmap;

    5.51.2   update and republish both the Roadmap and Change Control Process, following discussion with its customers, at least every six months thereafter;

    5.51.3   ensure that the Roadmap:

        a)   includes the list of the commitments agreed by BT and AS with its customers through the OTA-facilitated AS product and service development and enhancement identification process from December 2008 until August 2009 (the "Commitments"); and,

        b)   describes when the Commitments will be delivered;

    5.51.4   ensure that the Change Control Process provides for any change to the Commitments, including the delivery date, or the list of Commitments, to be subject to agreement with AS's customers following OTA-facilitation and review, reflecting the need for any revised Commitments to continue to deliver customer needs in a comparable manner to the Commitments."

3.   **Separation of Upstream and Downstream Divisions**

3.1   Section 8.5 is deleted and replaced with:

"8.5   BT shall implement Level 1 Systems Separation between AS on the one hand and the Upstream and Downstream Divisions on the other of any system which is not a Management Information System or Operational Support System but which holds Commercial Information and Customer Confidential Information by 30 June 2010. For the avoidance of doubt the obligation in this section does not extend to any system which is operated exclusively by a function located outside AS and the Upstream and Downstream Divisions, or by a function listed in Annex 2 and accessed only by people in Annex 2. BT will use its reasonable endeavours to achieve such Level 1 Systems Separation earlier."

4.   **Annex 1**

4.1   Annex 1 is deleted and replaced with:

"**Annex 1**

Equivalence of Inputs Timetable

1.   For Wholesale Analogue Line Rental, the RFS date will be 30 June 2007. The following intermediate staged milestones post the RFS date will apply in respect of Wholesale Analogue Line Rental:

   a)   at least 30% of BT's relevant installed End-User base as at 30 June 2008 will have been migrated to the Equivalence of Inputs product by that date; and

   b)   at least 70% of BT's relevant installed End-User base as at 30 June 2009 will have been migrated to the Equivalence of Inputs product by that date.

2.   For Wholesale ISDN2 Line Rental, the RFS date will be 30 September 2007.

3.   For Wholesale ISDN30 Line Rental, the RFS date will be 29 February 2008.

4.   For Wholesale Extension Service, the RFS date will be 30 September 2006, and the IBMC date in relation to BT's relevant retail Ethernet-based local area network extension service will be 31 March 2007.

5.   The RFS date for Shared Metallic Path Facility will be 30 June 2006. The IBMC date in relation to asymmetric IPStream will be 31 December 2006.

6.   The RFS date for Metallic Path Facility will be 30 June 2006. The IBMC date in relation to symmetric IPStream will be 31 December 2006.

7.(i)   For IPStream the RFS date will be 31 December 2005 and the IBMC date in relation to BT's relevant retail broadband service will be 31 December 2006.

7.(ii) BT will make IPstream Connect available for order on 31 October 2008. On 31 October 2008 BT will start the migration of the relevant BT and Communications Providers installed End-user base. For IPstream Connect the IBMC date in relation to IPStream will be 31 March 2009. The migration of the Communications Providers installed End-User base will be completed on 31 March 2009.

8.   For Backhaul Extension Service BT will have Equivalence of Inputs capable systems in place by 30 September 2006.

9.   BT shall by 30 September 2006 launch a Wholesale Extension Service Backhaul Product which shall be offered on an Equivalence of Inputs basis.

10.   With effect from the relevant RFS date, for those Communications Providers who wish to migrate their existing End-Users to the EOI product, BT will discuss with any such Communications Provider how their End-Users' migrations could be accomplished with minimum disruption to the Communications Providers' End-Users, their service and systems, dependent in particular on the volume of customers each Communications Provider needs to migrate. BT and the Communications Provider will endeavour to work jointly in achieving a smooth transition. In any event, subject to the provisions of section 20.3, the migration will be completed by the relevant IBMC date. For the avoidance of doubt this paragraph refers to customer migrations rather than product migrations dealt with in sections 3.7 and 3.8 of the Undertakings.

11.   For Shared Metallic Path Facility and Metallic Path Facility the RFS dates shown above are the dates from which an Equivalence of Inputs product is available for use by Communications Providers and by BT (and is in use by BT) for new customers of products based upon that Shared Metallic Path Facility or Metallic Path Facility. The BT products to which the Shared Metallic Path Facility is an input are asymmetric IPStream until IBMC for IPstream Connect and asymmetric IPstream Connect as of the date IPstream Connect is available for order. The BT products to which the Metallic Path Facility is an input are symmetric IPStream

until IBMC for IPstream Connect and symmetric IPstream Connect as of the date IPstream Connect is available for order. The definition of End-User included in the RFS date definition set out in section 2 of these Undertakings shall be read accordingly."

5. **Effect**

Unless otherwise stated the variations to the Undertakings set out in this Agreement shall take effect immediately upon signature hereof on behalf of both parties.

Signed for and on behalf of British Telecommunications plc

Signature _____

Name:

Position:

Date:

Signed for and on behalf of Ofcom

Signature _____

Name:

Position:

Date:

Legal text of the variation showing changes from the Consultation Document

Variation of the Undertakings given to Ofcom by BT pursuant to the Enterprise Act 2002 – Variation Number 20

Variation related to reprioritisation of BT's remaining Undertakings commitments on information systems separation.

WHEREAS:

(a)   British Telecommunications plc ("BT") has given Ofcom certain undertakings (the "Undertakings") which took effect on 22 September 2005, pursuant to the Enterprise Act 2002;

(b)   By virtue of section 18.1 of the Undertakings BT and Ofcom may from time to time vary and amend the Undertakings by mutual agreement;

(c)   BT and Ofcom have agreed to vary the Undertakings as hereinafter appears.

NOW THEREFORE:

It is hereby agreed between BT and Ofcom pursuant to section 18.1 of the Undertakings that the Undertakings are varied as follows:

1.   **Definitions and interpretation**

    1.1   Words or expressions in this Agreement have the same meaning as in the Undertakings.

    1.2   References in this Agreement to section numbers are references to section numbers in the Undertakings.

2.   **Products and Services supplied by Access Services**

2.1.   Section 5.44 is deleted and replaced with,

    "5.44 BT shall:

        5.44.1   ensure that all its Operational Support Systems designed for AS are designed on the principle of separation from the rest of BT systems

except for those Operational Support Systems listed in Annex 6, in accordance with section 5.44.6;

5.44.2   ensure that:

(a) its Operational Support Systems, other than those Operational Support Systems listed in Annex 6, will be run physically separate for AS and the rest of BT when reasonably practicable and proportionate, unless otherwise agreed between BT and Ofcom;

(b) by ~~30th~~30 June 2010:

  i)   at least 90% of BT's relevant installed End-User base shall be migrated so that the products that this base purchases, that consume the Measured Products, do so on an EOI basis from AS; and

  ii) at least 80% of BT's Customer Side Records relating to the Measured Products held on Operational Support Systems shared between AS and the rest of BT are migrated to at least Level 2 System Separation;

(c) by 31 December 2012:

  i)   at least 95% of BT's relevant installed End-User base shall be migrated so that the products that this base purchases, that consume the Measured Products, do so on an EOI basis from AS; and

  ii) at least 90% of BT's Customer Side Records relating to the Measured Products held on Operational Support Systems shared between AS and the rest of BT are migrated to at least Level 2 System Separation;

(d) by 31 December 2011 or within six months of the date of the completion of the migration of the BT business stack, whichever is the earlier, Ofcom is advised of the further increased percentage migrations of both the relevant installed End-User base and BT's Customer Side Records to be achieved by ~~the~~ 30 June 2014 to

demonstrate continued <u>significant</u> progress towards the migration of business customers to separate Operational Support Systems;

    (e) that the implementation and ongoing application of the obligations in relation to Customer Side Records in section 5.44.2 is:-

        i)   subject to regular audits by BT's internal audit group;

        ii)   subject to an audit commissioned by the EAB on an ongoing basis at least every 24 months from<u> 30</u> June 2010;

    (f) for the purpose of this section the Measured Products shall additionally include the AS EOI products CCTV Access, Optical Spectrum Access, Optical Spectrum Extended Access, Broadcast Access and Bulk MPF existing as at 1 April 2009 (and as they may evolve, be developed or replaced (whether under the aforementioned or new names) from time to time);

5.44.3   until such time as an Operational Support System is physically separated, and unless otherwise agreed between BT and Ofcom:-

    (a) implement User Access Controls for Operational Support Systems capability to the extent it supports the Equivalence of Inputs products of Wholesale Analogue Line Rental, Shared Metallic Path Facility and Metallic Path Facility by 30 June 2007, the Equivalence of Inputs product of Wholesale ISDN2 Line Rental by 30 September 2007 and the Equivalence of Inputs product of Wholesale ISDN30 Line Rental 29 February 2008;

    (b) ensure that it is Ready to Mass Migrate Customer Side Records where those records relate to the consumption by Residential Customers of PSTN voice telephony products by 31 March 2008;

    (c) ensure that 50% of all Customer Side Records relating to the Measured Products held on Operational Support Systems shared between AS and the rest of BT are migrated to physically separate Operational Support Systems by 30 November 2008;

    (d) in calculating the percentage in section 5.44.3 (c) include those Customer Side Records already separated since 30 June 2006;

5.44.4 review on a regular basis with Ofcom achievement on a roadmap for the separation referred to in sections 5.44.1, and 5.44.2;

5.44.5 ensure that the implementation and ongoing application of the User Access Control requirement referred to in section 5.44.3 (a) and section 5.44.6 is:-

(a) subject to regular audits by BT's internal audit group;

(b) subject to an audit commissioned by the EAB (in the exercise of its function under section 10.9) in relation to User Access Controls for Operational Support Systems capability to the extent it supports the Equivalence of Inputs products of Wholesale Analogue Line Rental, Shared Metallic Path Facility and Metallic Path Facility; such audit to commence as soon as reasonably practicable after 30 June 2007 and to be completed including having the outcome agreed by the EAB by 31 December 2007 unless otherwise agreed with Ofcom and the outcome of such audit to be shared with Ofcom in writing no later than 15 working days after its completion;

(c) subject to an independent, external audit focussing on risk assessment, solution design, implementation assessment and ongoing controls to be completed by 30 June 2008; and

(d) subject to an additional independent external audit in the period between the completion of the audit referred to in 5.44.5 (c) and 30 June 2010 focussing on the ongoing application of User Access Controls and thereafter on an ongoing basis every 24 months from 30 June 2010; and

5.44.6 unless and insofar as an alternative solution is agreed with Ofcom, on or before 30 June 2010:

(a) implement User Access Controls to those Operational Support Systems listed in Annex 6 that contain Physical Layer Information or Service Level Information such that access to that information is limited to BT employees:-

i) working for AS; or

ii) working for BT Operate or BT Design to ensure the efficient design, planning, building, configuring, management, maintenance and removal of the Access Network, BT's Backhaul Network and BT's other electronic communications networks, efficient network incident management and resolution, or for the provision of Transmission Layer assets utilised by AS in the provision of its products; or

iii) who are nominated individuals (if any), or individuals occupying the roles and functional areas (and their relevant external advisers, subcontractors and agents) listed in Part A and Part B of Annex 2.

For the avoidance of doubt AS shall be responsible for and control the Physical Layer Information contained in those Operational Support Systems listed in Annex 6.

(b) ensure that where there is an operational need for BT people other than those referred to in sub-section (a) to access Service Level Information contained in an Operational Support System listed in Annex 6 that the information shall only be accessed via a physically separate Operational Support System and BT shall implement User Access Controls to such Operational Support Systems;

(c) the EAB shall carry out periodic checks on a quarterly basis, unless BT and Ofcom agree in consultation with the EAB to extend the periodic review interval up to a maximum of 6 months, to monitor access to the Operational Support Systems listed in Annex 6, in accordance with sub-paragraphs (a) and (b) above, to ensure that there was a valid reason for access. The EAB will also, at the same time, confirm the total number of users who have accessed the Annex 6 systems at that specific time and report this figure to Ofcom."

2.2. The following new section is inserted into the Undertakings after section 5.50:

"AS Product and Service Roadmap and Commitments

5.51 AS shall:

5.51.1 publish on or before 30 ~~June~~September 2009:

a) a 18 month AS roadmap which will establish the timing and content of the product and service developments and enhancements to existing products (the "Roadmap"); and

b) a document specifying the change control process (the "Change Control Process") that applies to the Roadmap;

5.51.2 update and republish both the Roadmap and Change Control Process, following discussion with its customers, at least every six months thereafter;

5.51.3 ensure that the Roadmap:

a) includes the list of the commitments agreed by BT and AS with its customers through the OTA-facilitated AS product and service development and enhancement identification process from December 2008 until ~~April~~August 2009 (the "Commitments"); and,

b) describes when the Commitments will be delivered;

5.51.4 ensure that the Change Control Process provides for any change to the Commitments, including the delivery date, or the list of Commitments, to be subject to agreement with AS's customers following OTA-facilitation and review, reflecting the need for any revised Commitments to continue to deliver customer needs in a comparable manner to the Commitments."

3.   **Separation of Upstream and Downstream Divisions**

3.1   Section 8.5 is deleted and replaced with:

"8.5   BT shall implement Level 1 Systems Separation between AS on the one hand and the Upstream and Downstream Divisions on the other of any system which is not a Management Information System or Operational Support System but which holds Commercial Information and Customer Confidential Information by 30 June 2010. For the avoidance of doubt the obligation in this section does not extend to any system which is operated exclusively by a function located outside AS and the Upstream and Downstream Divisions, or by a function listed in Annex 2 and accessed only by people in Annex 2. BT will use its reasonable endeavours to achieve such Level 1 Systems Separation earlier."

4.   **Annex 1**

4.1   Annex 1 is deleted and replaced with:

"**Annex 1**

Equivalence of Inputs Timetable

1.   For Wholesale Analogue Line Rental, the RFS date will be 30 June 2007. The following intermediate staged milestones post the RFS date will apply in respect of Wholesale Analogue Line Rental:

   a)   at least 30% of BT's relevant installed End-User base as at 30 June 2008 will have been migrated to the Equivalence of Inputs product by that date; and

   b)   at least 70% of BT's relevant installed End-User base as at 30 June 2009 will have been migrated to the Equivalence of Inputs product by that date.

2.   For Wholesale ISDN2 Line Rental, the RFS date will be 30 September 2007.

3.   For Wholesale ISDN30 Line Rental, the RFS date will be 29 February 2008.

4.   For Wholesale Extension Service, the RFS date will be 30 September 2006, and the IBMC date in relation to BT's relevant retail Ethernet-based local area network extension service will be 31 March 2007.

5.   The RFS date for Shared Metallic Path Facility will be 30 June 2006. The IBMC date in relation to asymmetric IPStream will be 31 December 2006.

6.   The RFS date for Metallic Path Facility will be 30 June 2006. The IBMC date in relation to symmetric IPStream will be 31 December 2006.

7.(i) For IPStream the RFS date will be 31 December 2005 and the IBMC date in relation to BT's relevant retail broadband service will be 31 December 2006.

7.(ii) BT will make IPstream Connect available for order on 31 October 2008. On 31 October 2008 BT will start the migration of the relevant BT and Communications Providers installed End-user base. For IPstream Connect the IBMC date in relation to IPStream will be 31 March 2009. The migration of the Communications Providers installed End-User base will be completed on 31 March 2009.

8.   For Backhaul Extension Service BT will have Equivalence of Inputs capable systems in place by 30 September 2006.

9.   BT shall by 30 September 2006 launch a Wholesale Extension Service Backhaul Product which shall be offered on an Equivalence of Inputs basis.

10. With effect from the relevant RFS date, for those Communications Providers who wish to migrate their existing End-Users to the EOI product, BT will discuss with any such Communications Provider how their End-Users' migrations could be accomplished with minimum disruption to the Communications Providers' End-Users, their service and systems, dependent in particular on the volume of customers each Communications Provider needs to migrate. BT and the Communications Provider will endeavour to work jointly in achieving a smooth transition. In any event, subject to the provisions of section 20.3, the migration will be completed by the relevant IBMC date. For the avoidance of doubt this paragraph refers to customer migrations rather than product migrations dealt with in sections 3.7 and 3.8 of the Undertakings.

11. For Shared Metallic Path Facility and Metallic Path Facility the RFS dates shown above are the dates from which an Equivalence of Inputs product is available for use by Communications Providers and by BT (and is in use by BT) for new customers of products based upon that Shared Metallic Path Facility or Metallic Path Facility. The BT products to which the Shared Metallic Path Facility is an input are asymmetric IPStream until IBMC for IPstream Connect and asymmetric

IPstream Connect as of the date IPstream Connect is available for order. The BT products to which the Metallic Path Facility is an input are symmetric IPStream until IBMC for IPstream Connect and symmetric IPstream Connect as of the date IPstream Connect is available for order. The definition of End-User included in the RFS date definition set out in section 2 of these Undertakings shall be read accordingly."

5. **Effect**

Unless otherwise stated the variations to the Undertakings set out in this Agreement shall take effect immediately upon signature hereof on behalf of both parties.

Signed for and on behalf of British Telecommunications plc

Signature _____

Name:

Position:

Date:

Signed for and on behalf of Ofcom

Signature _____

Name:

Position:

Date:

Legal text of the exemptions and agreements wording

Exemptions and agreements wording relating to consequential amendments to existing exemptions following Variation Number 20 to the Undertakings relating to re-prioritising BT's remaining Undertakings commitments on information systems separation.

WHEREAS:

(a)   British Telecommunications plc ("BT") has given Ofcom certain undertakings (the "Undertakings") which took effect on 22 September 2005, pursuant to the Enterprise Act 2002;

(b)   BT and Ofcom have previously agreed the following exemptions and agreements to the Undertakings in relation to:

i.   AS inputs into BT's Redcare CCTV product and AS inputs into BT's Media & Broadcasting business as published in Ofcom's statement dated 19 July 2007 entitled "Requests from BT for specified exemptions and agreements to its Undertakings under the Enterprise Act 2002 (Part 3);

ii.   AS inputs (including Hand Over Distribution Frames and Local Loop Unbundling internal tie cables) into other parts of BT to support the BT Featurenet product portfolio and to allow BT Wholesale and or BT Operate to carry out activities within section 5.12, as agreed on 30 June 2008 following the "BT request for exemption from equivalence under section 5.46.1 in relation to Featurenet";

iii.   AS inputs into BT's Featureline products and AS ASDH2-based inputs into BT's MagaStream Ethernet products as published in Ofcom's statement dated 21 December 2006 entitled "Request from BT for specified exemptions and agreements to its Undertakings under the Enterprise Act 2002 (Part 2)";

iv.   AS inputs into BT's WaveStream Regional and WaveStream Connect services and products as published in Ofcom's statement dated 20 May 2008 entitled "Requests from BT for exemptions from its Undertakings under the Enterprise Act 2002 for Wavestream, Redcare Fire and Security and Pathfinder (Part 5)"; and

v.   BT Wholesales provision of Messaging Services and Bill Direct as set out in Request Number 5 in Ofcom's Statement dated 3 October 2007 entitled "Additional Requests from BT for exemptions and variations to its Undertakings under the Enterprise Act 2002 (Part 4)".

(c)   BT and Ofcom have agreed to vary the exemptions to the Undertakings as hereinafter appears.

NOW THEREFORE:

Ofcom and BT hereby agree the following amendments to the following exemptions and agreements to the BT Undertakings and that such amendments shall apply as from the date of this agreement:

Redcare CCTV and Media & Broadcast

1)   delete the words "*30 June 2010, the day after which will serve as an IBMC date for AS's inputs into such products*" from paragraph 1 and 2 of the exemptions and agreement wording at Annex 2 of Ofcom's Statement entitled "Requests from BT for specified exemptions and agreements to its Undertakings under the Enterprise Act 2002, published 19 July 2007, and replace with the words "*the date when the Operational Support Systems for each product (or their variants) are run physically separate in accordance with section 5.44.2 (as amended)*".

Featurenet

2)   delete the words "*30 June 2010, the day after which will serve as an IBMC date for AS's inputs into such products. If completion of migration to BT's NGN 21CN is not going to be achieved by 30 June 2010, BT and Ofcom may in any event agree a later IBMC date*" from paragraph 1 of the agreement of 30 June 2008 entitled "BT request for exemption from equivalence under section 5.46.1 in relation to Featurenet" and replace with the words "*(subject to paragraph 2) the date when the Operational Support Systems for each product (or their variants) are run physically separate in accordance with section 5.44.2 (as amended)*".

3)   delete the words "*30 June 2010, the day after which will serve as an IBMC date for AS's inputs into such products. If completion of migration to BT's NGN 21CN is not going to be achieved by 30 June 2010, BT and Ofcom may in any event agree a later IBMC date*" from paragraph 2 of the agreement of 30 June 2008 entitled "BT request for exemption from equivalence under section 5.46.1 in relation to Featurenet" and replace with the words "*until all existing BT Featurenet installations are withdrawn or replaced*".

4)   delete the words "*, this exemption is to last up to and including 30 June 2010, the day after which will serve as an IBMC date for AS's inputs into such products. If completion of migration to BT's NGN 21CN is not going to be achieved by 30 June 2010, BT and Ofcom may in any event agree a later IBMC date*" from paragraph 3 of the agreement of 30 June 2008 entitled "BT request for exemption from equivalence under section 5.46.1 in relation to Featurenet" and replace with the words "*until all existing BT Featurenet installations are withdrawn or replaced*".

Featureline

5)   delete the current text of paragraph 3(b) of the exemptions, agreements and variations wording (including Variation Number: 7) at Annex 3 of Ofcom's Statement entitled "Requests from BT for specified exemptions and agreements to its Undertakings under the Enterprise Act 2002 (Part 2)", published 21 December 2006 and replace with the words "*the date when the Operational Support Systems for each product (or their variants) are run physically separate in accordance with section 5.44.2 (as amended)*".

MegaStream Ethernet

6)   delete the words "*30 June 2010, the day after which will serve as an IBMC date for AS's inputs into such products. If completion of migration to BT's NGN 21CN is not going to be achieved by 30 June 2010, BT and Ofcom may in any event agree a later IBMC date*" from paragraph 2 of the Exemptions, agreements and variations wording (including Variation Number: 7) at Annex 3 of Ofcom's Statement entitled "Requests from BT for specified exemptions and agreements to its Undertakings under the Enterprise Act 2002 (Part 2)", published 21 December 2006 and replace with the words "*the date when the Operational Support Systems for each product (or their*

variants) are run physically separate in accordance with section 5.44.2 (as amended)".

WaveStream Connect and Regional

7)   delete the words "*30 September 2010 in the case of both WaveStream Connect and WaveStream Regional, the day after which in each case will serve as an IBMC date, unless otherwise agreed with Ofcom*" from paragraph 1(c) of the exemptions and agreement wording at Annex 2 of Ofcom's Statement entitled "Requests from BT for specified exemptions and agreements to its Undertakings under the Enterprise Act 2002 for Wavestream, Redcare Fire and Security and Pathfinder, published 20 May 2008 (Part 5)" and replace with the words "*the date when the Operational Support Systems for each product (or their variants) are run physically separate in accordance with section 5.44.2 (as amended)*".

Messaging Services and Bill Direct

8)   delete the words "*30 June 2010*" from paragraph 1(b) of the Exemptions and Agreements wording at Annex 3 of Ofcom's Statement entitled "Additional Requests from BT for exemptions and variations to its Undertakings under the Enterprise Act 2002 (Part 4)", published 3 October 2007 and replace with the words "*the date when the Operational Support Systems for each product (or their variants) are run physically separate in accordance with section 5.44.2 (as amended)*".

9)   delete the word "*three*" from the last paragraph of paragraph 1 of the Exemptions and Agreements wording at Annex 3 of Ofcom's Statement entitled "Additional Requests from BT for exemptions and variations to its Undertakings under the Enterprise Act 2202 (Part 4)", published 3 October 2007 and replace with the word "*six*".

Definitions and interpretation

Words or expressions in this Agreement have the same meaning as in the Undertakings.

References in this Agreement to section numbers are references to section numbers in the Undertakings.

Effect

Unless otherwise stated the agreements and exemptions set out in this Agreement shall take effect immediately upon signature hereof on behalf of both parties.

Signed for and on behalf of British Telecommunications plc

Signature _____

Name:

Position:

Date:

Signed for and on behalf of Ofcom

Signature _____

Name:

Position:

Date:

Annex 5

Glossary

21st Century Network (21CN) is the term BT uses to describe its NGN (see below for a definition of NGN). See: http://www.btwholesale.com for more information.

Access network is an electronic communications network which connects end users to a service provider; running from the end user's premise to a Local Access Node and supporting the provision of copper-based and fibre-based access services to end users. It is sometimes referred to as the local loop or last mile.

Asymmetric Digital Subscriber Line (ADSL). A digital technology that allows the use of a standard telephone line to provide high-speed data communications and allows higher speeds in one direction (towards the customer) than the other. It is used in current internet services with download speeds up to 24Mbit/s.

Analogue is the direct representation of a waveform, as opposed to digital which is a coded representation.

BT Group plc is the title of BT Group plc with company number is 4190816.

BT's Backhaul Network is BT's Electronic Communications Network from its Local Access Nodes to another BT Local Access Node; or a BT Core Node; or another Communications Provider's point of handover.

BT Wholesale is the business division within the BT organisation which predominantly manages upstream products and services, apart from those which will be provided by Openreach designed for use by other Communications Providers, as inputs to their own products. It includes any successors division to BT Wholesale.

Broadband is an internet service which provides high speed access.

Communications Provider (CP) is a person providing a Public Electronic Communications Service or a Public Electronic Communications Network, including BT where relevant and which includes any Internet Service Provider (ISP). It excludes any person's service or network procurement for the purposes of self provision or the members of his group of companies for their own private use.

Customer Service Record is the set of data which is required to provide a customer with a product or service instance.

Customer Side Record is a Customer Service Record relating to BT as a purchaser from Openreach.

Downstream Divisions are BT's divisions which are predominantly concerned with providing end users with downstream products and services and for the avoidance of doubt excludes BTNI, BT Design and BT Operate.

Equality of Access Board (EAB) is a board committee established by BT as part of the undertakings to oversee compliance with them. See: http://www.btplc.com for more information.

Equality of Access Office (EAO) is an office within BT established by BT as part of the undertakings and with the role of supporting the EAB in its functions.

End user is a person (excluding another communications provider) that is a customer of a public electronic communications service provider, is a person that makes use of the service, or who is a person authorised by the customer to use the service supplied by the service provider.

Enterprise Act – The Enterprise Act 2002, amongst other things, provides Ofcom (having, under Section 370 of the Communications Act 2003, concurrent functions with the OFT under Part 4 of the Enterprise Act) with the power to make a market investigation reference to the Competition Commission ('CC') under specific circumstances. Where Ofcom considers such circumstances apply, as identified in our Strategic Review of Telecommunications, instead of making a reference to the CC, we can under Section 154 of the Enterprise Act accept undertakings as we consider appropriate. BT offered undertakings ("the Undertakings") in accordance with section 154 of EA02 in lieu of a reference to the CC. Ofcom instead of making a reference to the CC, decided to accept those Undertakings. The Undertakings that were given by BT, and accepted by Ofcom, on 22 September 2005 can be found at http://www.ofcom.org.uk/telecoms/btundertakings/btundertakings.pdf, and a consolidated version of the undertakings that includes subsequent variations can be found at http://www.ofcom.org.uk/telecoms/btundertakings/consolidated.pdf. More information on the Enterprise Act can be found on OFT's website www.oft.gov.uk.

Ethernet is a common technology which allows computers on a network to talk to each other. The technology utilises a protocol that controls data transmission, generally using an Ethernet IEEE 802.3 interface.

Exchange is a building which houses electronic equipment that connects telephone calls. Backhaul links from a content provider are terminated here to connect access links to end users.

Exchange Line is the telephone line that connects the customers' network terminating point to the local exchange.

Integrated Services Digital Network (ISDN) is a network which allows the digital transmission of voice and data over traditional copper lines. It enables the provision of digital exchange lines to customers and 64kbps end-to-end digital connectivity between them. Two or more 64kbit/s connections can be combined to provide a higher speed connection, e.g., 128kbit/s.

Internet Service Provider (ISP) is a company that provides individuals and other companies with access to the internet and other related services.

kbit/s denotes kilobits per second and is a unit of measurement of the speed of transfer of digital information. One kbit/s is equal to 1,000bit/s second.

Leased line is a permanently connected communications link between two premises dedicated to the customers' exclusive use.

LLU (Local Loop Unbundling) is the process where the incumbent operators (in the UK) it is BT and Kingston Communications) make their local network (the lines that run from customers premises to the telephone exchange) available to other communications providers. The process requires the competitor to deploy its own equipment in the incumbent's local exchange and to establish a backhaul connection between this equipment and its core network.

Local Loop is the access network connection between the customer's premises and the local PSTN exchange, usually a loop comprised of two copper wires.

Mbit/s denotes megabits per second and is a unit of measurement of the speed of transfer of digital information. One Mbit/s is equal to one million bits per second.

Metallic Path Facility (MPF) is a circuit comprising a pair of twisted metal wires between an end user's premise and a main distribution frame that employs electric, magnetic, electromagnetic, electrochemical or electromechanical energy to convey signals when connected to an electronic communications network.

Next Generation Access (NGA) are either new or upgraded access networks that will allow substantial improvements in broadband speeds and quality of service compared to today's services. NGA's can be based on a number of technologies including cable, fixed wireless and mobile. Most often used to refer to networks using fibre optic technology.

Next Generation Network (NGN) is a network utilising new technology such as Ethernet and IP to provide an array of services to end users.

Office of Communications (Ofcom) is the regulator for the communications industries, created by the Communications Act 2003, which came into force in July 2003.

Office of the Telecommunications Adjudicator (OTA) is a body that operates independently of Ofcom and of industry whose vision is to champion end user issues and to work to ensure that CPs will benefit from a competitive telecoms infrastructure based on Openreach products that have no operational barriers to their success. The OTA facilitates the implementation of new products and processes where necessary to enable a wider range of CPs and end users to benefit from clear and focussed improvements in them and to do this, in particular, where multi-lateral engagement is needed for their implementation. The OTA will also bring all parties together to find prompt mediated resolution of working-level implementation issues. The OTA primarily deals with major or strategic issues affecting the rollout and performance of Openreach products as defined in the Memorandum of Understanding (http://www.offta.org.uk/OTA2MoU.pdf).

Openreach is the BT division created by BT to fulfil the undertakings related to Access Services. See: http://www.openreach.co.uk for more information.

Operational Support Systems (OSS) are the support systems carrying out the functions and processes which help to run a network and business, including (but not limited to) pre-ordering, taking a customer's order, configuring network components, creating a bill and managing faults.

Public Switched Telephone Network (PSTN) is a telecommunications network providing voice telephony for the general public.

Significant Market Power (SMP) is a position held on a relevant market, by an operator for example, either individually or jointly with others, equivalent to dominance. That is a position of economic strength affording the entity in question the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers.

User Access Controls refer to the application of user profiles and/or data tagging or authorisation control mechanisms combined with behavioural mechanisms such that users outside Openreach can only have access to systems or applications or data which is consistent with the Undertakings and which does not lead to undue discrimination against other CPs.

Voice over Internet Protocol (VoIP) is a technology that allows users to send calls using Internet Protocol, using either the public Internet or private IP networks.

Wholesale Analogue Line Rental is an Electronic Communications Service provided for the use and ordinary maintenance of an analogue Exchange Line.

Wholesale Line Rental (WLR) is a regulatory instrument requiring the operator of local access lines to make this service available to competing providers at a wholesale price.