



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

Consultation

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Section 1

Summary

The issues involved

- 1.1 In this document we are proposing changes to certain obligations that British Telecommunications plc ("BT") has relating to the separation of its information systems between Openreach and other parts of BT. Openreach is the BT division responsible for the majority of wholesale products sold to BT and external communications providers. These changes matter because they affect how independently Openreach operates. These proposals also affect how BT provides certain services to other communications providers ("CPs"), and ultimately how effective competition is in delivering benefits to residential and business customers.
- 1.2 Our proposals 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 markets². 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"), which we have also published today³. 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' services⁴, and business connectivity services based on Ethernet⁵; and
 - Broadband competition is very strong. There are now nearly six million broadband lines based on 'local loop unbundling'. 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 consultation relates largely to those remaining milestones that have a dependency on BT's information systems separation programme and, to a much lesser extent, on the delay and revision in BT's deployment plans of a next generation core network ("NGN"). One of the key aims of the Undertakings was that BT's division responsible for the wholesale products primarily provided over BT's access and backhaul networks - Openreach - should operate independently from the rest of BT ("RoBT"). According to the Undertakings it should further operate in a way that enables all of its customers to be provided with an equivalent level of service. BT is obliged to ensure that the information systems used by Openreach are separated such that other BT

¹ pursuant to section 154 of the Enterprise Act

² See *Final statements on the Strategic Review of Telecommunications, and undertakings in lieu of a reference under the Enterprise Act 2002*: - 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

businesses cannot access information concerning the provision of services by Openreach to competing providers.

- 1.4 There are different levels to 'systems separation', but ultimately the current (and original) target is for Openreach's data, applications and hardware to be separated from RoBT by June 2010. Achieving this separation obligation is easier in the case where new systems are being deployed and hence in meeting new supply of products supported by new systems. It is for this reason that Openreach's key transaction system has been designed with separation in mind from the start. However, a key activity BT needs to undertake to satisfy its separation obligations is to ensure that information relating to its legacy retail installed customer base is migrated to systems that are separate from those used by Openreach. The reprioritisation of BT's remaining obligations on which we are consulting primarily concerns a delay in the migration of BT's legacy retail customer records to systems that are separate from Openreach. It also concerns a delay in the physical separation of Openreach's systems from RoBT.

Considering changes

- 1.5 BT approached us late in 2008 to request a reprioritisation of some of its remaining Undertakings obligations. The reason for this request was that BT's systems resources were coming under pressure from other factors. The first of these factors was new demands made by Openreach's customers. Also, BT was planning to press ahead with the deployment of its next generation access ("NGA") network, to support higher-speed broadband services. Delays to BT's NGN, also known as its 21st Century Network ("21CN"), also meant that the replacement of a number of legacy products by new products would not happen on the timescales originally anticipated and that, consequently, systems separation would be more challenging. Lastly, in light of the worsening economic climate, both Openreach's and its customers' priorities have changed.
- 1.6 The particular 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.
- 1.7 BT also explained to us that without a rescheduling of its outstanding Undertakings commitments, it would not be able to accommodate CPs' demands for product and service improvements by Openreach.
- 1.8 We stated that we would be open to considering a re-prioritisation of BT's resources. This would cover 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 Office of the Telecommunications Adjudicator

("OTA")⁶ 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.

- 1.9 We have so far received support from Openreach's customers for this approach. Many of them have been working with Openreach and the OTA to identify the priority Openreach developments.

Our proposals

- 1.10 The proposals on which we are consulting consist of two key parts. Firstly, there is a proposed set of new commitments to cover the delivery of service developments requested by Openreach's customers. Secondly, we are proposing to revise a number of BT's remaining Undertakings commitments relating to systems separation. This variation has a further knock-on impact on a number of other commitments relating to the migration of BT's legacy customer base to separate systems (for a number of products). Also, a specific obligation on BT is impacted by delays in BT's deployment of its 21CN.
- 1.11 The proposed new obligations on BT would ensure that Openreach delivers a set of new service developments in addition to some enhanced functionality for existing services. Many of the priority developments identified by Openreach's customers are about improving Openreach's level of service. These improvements are, for example, intended to make it quicker to bring new products to market that rely on Openreach inputs, and to reduce the cost of errors arising from the processes and documentation used by Openreach. Also, some specific additional product developments are being offered by Openreach, a number of which are specifically designed to benefit Openreach's customers serving business customers.
- 1.12 Under our proposals, Openreach would be required to deliver the additional developments as part of the Undertakings. This is important, because these developments are part of the overall proposals to re-prioritise how resources are used. Whilst the Undertakings would provide flexibility for changes to be made to the original list of commitments offered by Openreach, for example as the priorities of Openreach's customers change, this would be subject to tight change control criteria.
- 1.13 Three broad changes to the remaining commitments in BT's Undertakings are being proposed. The first relates to the approach and timing for full physical systems separation. The second relates to the migration of BT's end users' customer records onto systems that are separate from Openreach's systems. The third concerns the migration of BT's legacy customer base to equivalence of inputs ("EOI") products where this has not already been achieved⁷.
- 1.14 In terms of full physical separation, under our proposals, BT would remain committed to full physical systems separation, albeit not to the original June 2010 timescale. However, the proposed variation would provide BT with more flexibility to continue on

⁶ 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.

⁷ EOI means BT providing the same product or service to all CP (including BT) on the same timescales, terms and conditions. See paragraph 2.3 for a fuller definition.

the path to separation of legacy systems according to more pragmatic considerations⁸.

- 1.15 As a result of the proposed revised approach towards physical systems separation, BT would prioritise the separation of customer records over and above other aspects of separation, as this form of separation is particularly important in addressing potential competition concerns.
- 1.16 We propose that the remaining milestones for BT to migrate its installed base of customers to EOI products (particularly in relation to its key telephony products), be removed from the Undertakings and replaced by a new measure of progress. Currently we measure the extent of migration by individual product records, using 'installed base migration complete' ("IBMC") measures. We propose instead to track progress by measuring the percentage of customers that have been migrated to using EOI products. Under the proposed new separation plans, the intention is that a customer would be migrated to a separate system once all of the products that the customer uses are available on the new system. We consider that the new measure would give a more meaningful measurement of BT's migration than the current individual product migration measures.
- 1.17 The resulting implications for BT's remaining obligations would be as follows:
- Openreach's Operational Support Systems would be run physically separate from RoBT when reasonably practicable and proportionate, unless otherwise agreed between BT and Ofcom. There would be no fixed date by which the remaining systems will be separated;
 - 80 per cent of BT's customer records would have to be migrated to separate systems by June 2010. This would cover virtually all of BT's residential customers;
 - 90 per cent of BT's customer records would have to be migrated to separate systems by December 2012. This would include around half of business customers;
 - A higher percentage milestone for separation of customer records would have to be achieved by June 2014⁹. The target would be set once BT's new business system is built and the migration plan is clear. We would expect substantial progress by that date towards completing the migration of business customers;
 - The IBMC dates for WLR3¹⁰, ISDN2¹¹ and ISDN30 would be removed from the Undertakings; and
 - A new obligation would be placed on BT to migrate its relevant customer base for a defined list of products to consume EOI inputs from Openreach. The obligation

⁸ such as when old information systems hardware is replaced or rationalised

⁹ to be provided by BT by the end of 2011

¹⁰ WLR stands for 'Wholesale Line Rental'. WLR allows alternative suppliers to rent access lines on wholesale terms from BT, and resell the lines to customers, providing a single bill that covers both line rental and telephone calls.

¹¹ ISDN stands for "Integrated Service Digital Network". ISDN services provide digital exchange lines to customers and end-to-end digital connectivity between them. ISDN allows two or more 64 kbit/s connections (two in the case of ISDN2) to be combined for a higher-speed connection.

would be for 90 per cent of customers consuming one or more of these products to be migrated by June 2010, 95 per cent by December 2012, and a higher percentage milestone to be achieved by June 2014¹².

- 1.18 We consider that the separation of customer records goes a significant way towards ensuring that Openreach operates as an independent entity from RoBT. In instances where customer records have not been separated, user access controls¹³ would continue to operate to prevent inappropriate information sharing between Openreach and RoBT. Whilst physical separation helps ensure that Openreach exercises considerable independence from RoBT over its IT resources, achieving this to a fixed timetable is more costly and gives less flexibility to deliver new developments requested by Openreach's customers. Forcing physical separation to an inflexible timetable could also have unintended consequences such as increasing Openreach's cost base and ultimately the costs borne by its customers.
- 1.19 We are therefore proposing that the pace of physical separation be driven more by pragmatic considerations such as when old information systems hardware is replaced or rationalised. In any event, new systems developed by Openreach will continue to be designed as separate from RoBT, as per BT's current obligations. We propose to monitor BT's progress towards full physical separation through regular roadmap reviews.
- 1.20 The revised obligation on BT to migrate its legacy customer base to EOI products once all relevant products are available on separate systems means that a number of BT's existing customers using, for example, standard telephony or ISDN products, would not migrate to EOI products until later than originally anticipated. This particularly affects business customers. The implication is that there may be some (non-price-related) differences between the products used by BT's legacy customers and those used by BT's newer customers and other CPs' customers. However, the differences between these products are, in our view, relatively minor and should not impact BT's competitors, who are purchasing EOI products from Openreach.
- 1.21 This document also proposes a number of amendments to existing Exemptions granted to BT in relation to its Undertakings commitments. The proposed changes to these exemptions are mainly a consequence of our proposals for changes in the timing of systems separation. The changes are also due, to a lesser extent, to BT's delays and revision to its 21CN deployment plans.
- 1.22 We have considered the overall impact of our proposals on competition and consumers, as well as on the comprehensive solution designed to be achieved as a result of the TSR. We conclude that our proposals do not depart from the aims the TSR, namely the delivery of 'Equality of Access'. The revised proposals would maintain a continued path towards the operational separation of Openreach from RoBT, and to delivering 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 will ensure that information is not inappropriately accessed. These will be subject to ongoing scrutiny by the Equality of Access Board ("EAB")¹⁴. Further, BT will continue to have the obligation to provide its roadmap for

¹² to be provided by BT by the end of 2011

¹³ user access controls restrict what information users can access, based on their role and the organisation of which they are part

¹⁴ 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.

systems separation to us for review. BT's Design Council¹⁵ will also regularly review Openreach's IT strategy to ensure that opportunities for systems separation are properly considered as they arise. We also consider that the delivery of additional Openreach developments would be beneficial to Openreach's customers and their own retail customers in turn. We consider that all these factors, when viewed in the context of BT's significant progress to date in implementing the Undertakings, suggest that the proposals set out in this consultation document remain consistent with the outcomes that the TSR set out to achieve.

¹⁵ 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.

Section 2

Introduction

Purpose of this document

- 2.1 This document is about proposed changes to some formal obligations that BT has concerning the services it provides in certain fixed telecommunications markets. In 2005 BT offered a set of commitments (the Undertakings) to address competition concerns that we had identified in those markets. Our concerns were set out in the *Strategic Review of Telecommunications Phase 2 Consultation Document* ("TSR Phase 2 Consultation")¹⁶. We accepted the Undertakings instead of referring those competition 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*¹⁷.
- 2.2 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.
- 2.3 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.*
- 2.4 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 barriers are 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.
- 2.5 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.

¹⁶ See http://www.ofcom.org.uk/consult/condocs/telecoms_p2/

¹⁷ See http://www.ofcom.org.uk/consult/condocs/statement_tsr/

- 2.6 We consider that, in general, BT has made good progress towards achieving the Undertakings commitments agreed with us 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 nearly six million being served by competitors to BT who have invested in their own local infrastructure. Today we are publishing a review of the progress so far in implementing the Undertakings¹⁸.
- 2.7 Despite these successes, BT and the rest of industry today face new challenges and circumstances have changed since the time when the Undertakings were agreed. In particular:
- Communications providers - Openreach's customers - are demanding new services and improved systems functionality 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 NGA network, which will have implications for CPs, consumers and the Undertakings¹⁹; 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.
- 2.8 The Undertakings can be varied by agreement between BT and Ofcom. In late 2008, BT approached us with a request to vary the Undertakings to reflect proposed changes to how Openreach's systems development resources are used. BT also suggested that some of the money and IT development capacity due to be spent on systems separation could instead be used to deliver more of the requirements of Openreach's customers for improved service or products. Since then, Openreach - with facilitation from the OTA - has consulted with its customers to agree a set of high priority requirements.
- 2.9 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 said that we were willing to consider potential changes to BT's systems separation obligations in combination with certain new commitments to Openreach's customers. This document presents our resulting proposals.

The process for making changes to the Undertakings

- 2.10 Section 18.1 of the Undertakings allows for BT and Ofcom to agree from time to time to vary the Undertakings. The Enterprise Act 2002 ("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". Ofcom's concerns were set out in the TSR Phase 2 Consultation. In

¹⁸ *Impact of the Strategic Review of Telecoms*, at <http://www.ofcom.org.uk/telecoms/btundertakings/>

¹⁹ 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/>

considering the case for varying the Undertakings, Ofcom must consider how the comprehensive solution will be impacted by the variation in question.

- 2.11 Section 155 of the Enterprise Act requires that we consult where we propose to amend the Undertakings in a material respect²⁰. However, in line with our standard decision-making process, we have consulted on all significant Undertakings variations in the past, irrespective of their materiality and the formal requirement in the Enterprise Act.
- 2.12 In this case we have decided to consult for a period of six weeks. We consider this period to be appropriate for this consultation because of the need to provide certainty to industry on the new developments that Openreach is committing to deliver. A six week consultation period is also sufficient because a high degree of informal consultation with industry stakeholders has already taken place on the details of the additional Openreach commitments. This is also consistent with the consultation period adopted for previous Undertakings variations. We expect to publish a final statement later this summer.

Structure of this document

- 2.13 The main parts of this document are as follows:
- Section 3 describes the key proposed changes:
 - revised systems separation obligations to safeguard the outcomes envisaged by the Undertakings; and
 - new obligations on Openreach to deliver the set of new developments considered by its customers to be high priority;
 - Section 4 discusses the implications of the proposed changes for the Undertakings, including consideration of how the variation would impact current exemptions and agreements to the Undertakings;
 - Section 5 assesses the impact of all of these proposals on competition, consumers and the Undertakings;
 - Annex 5 sets out the proposed legal text for the variation to the Undertakings;
 - Annex 6 contains BT's formal request for two revised exemptions to the Undertakings; and
 - Annex 7 contains the proposed legal text for the amendments to current exemptions that arise due to the proposed variation.

²⁰ as required by section 155 of the Enterprise Act

Section 3

Key proposed changes to the Undertakings

Introduction

- 3.1 This section describes our main proposals, which would be implemented through a variation to the Undertakings. We start by providing background to BT's systems separation obligations, and describing the current challenges in meeting these obligations. We then cover the following proposals:
- changes to systems separation obligations and the implications they would have on outstanding product milestones including the WLR3, ISDN2 and ISDN30 milestones; and
 - additional Openreach product and service developments, and the proposals for new Undertakings commitments to underpin those developments.
- 3.2 We set out our reasons for supporting these proposals when we discuss their impact in Section 5 of this document.

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. This explicitly recognises that the quality of the access that CPs have to the bottleneck asset is dependent on both the quality and characteristics of the products they purchase and the organisational structure of the supplier (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 communications providers in favour of RoBT. The objective of operational separation is therefore to ensure that the relationship between Openreach and a communications provider is as close as possible to the relationship between Openreach and BT's downstream divisions (BT Wholesale, Retail, Global Services), in the absence of structural separation.

Contribution of physical separation of systems to operational separation

- 3.5 The way in which an organisation operates is heavily dependent on the Operational Support Systems (OSS) within that organisation. For example, the vast majority of BT's voice services revenue comes from services that are supported by BT's largest OSS, CSS (Customer Support System). BT is a complex organisation where tight

vertical integration of all the activities across BT was given prominence in the past to achieve improved efficiency and customer service.

- 3.6 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 communications providers over other non-BT communications providers. 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 communications providers and promotes Equality of Access.
- 3.7 Although physical separation of systems is often seen as a purely technical task, the demands it makes for rigorous examination of business relationships, interfaces, processes, data and organisations are at the heart of running a business and therefore, in the case of BT, what it means to achieve operational separation. So requiring the physical separation of the systems used by each BT business unit is a way to make it very clear that the operational separation required by the Undertakings is fully implemented.
- 3.8 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 by each business unit to decide how to manage its IT resources.

BT's approach to physical separation and what it achieves

- 3.9 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 Openreach²¹.
- 3.10 One advantage of this approach is that it is completely consistent with the IT strategy that BT had been implementing for several years, thereby minimising the incremental cost associated with separation. Another advantage is that it allows BT to reduce its dependence on a complex and ageing IT estate. It therefore makes BT better equipped to deal with a wide range of future business or regulatory scenarios.
- 3.11 The main steps to this approach to separation are:
- Build or re-engineer systems and databases in Openreach and other LoBs, to receive and contain the separated data;

²¹ and to some extent for BT Wholesale

- Redesign the end-to-end processes, to enable cross-business working between the separate BT businesses using communication gateways instead of accessing records kept in shared systems;
- Re-engineer the old systems to support the new processes and electronic gateways (where old systems are retained, rather than replaced by new ones);
- Train the users (e.g., service agents) on the new processes and systems to enable them to deal with new 'separated' customer transactions; and
- Migrate data and applications to the new or re-engineered systems.

3.12 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. Both BT and Ofcom have therefore placed considerable emphasis on balancing the speed of separation with minimising the risk of customer disruption.

Levels of systems separation

3.13 It is not always possible to move directly to full physical separation. Three different levels of separation have been defined, and 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. The levels are:

- **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. This is a limited form of separation which needs to be applied to complex and numerous applications and databases. The effectiveness of these controls therefore requires continued scrutiny, which is provided by regular review and audit by the EAB. Because of this need for ongoing scrutiny, we consider that Level 1 separation does not represent a sufficient model of separation for the long term.
- **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 2 separation provides significant advantages. It offers much stronger assurance that the two organisations operate independently, reduces the risk of inappropriate access to information, and is much easier to monitor and audit.
- **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. This added level of separation offers a number of additional benefits. It avoids the risk of RoBT receiving preferential service if the shared systems experience capacity constraints, performance problems or hardware failure. It provides Openreach with considerable independence in its IT

purchasing decisions. It also separately identifies Openreach's true IT costs, so giving a better basis for regulatory decisions that need to assess Openreach's costs. In these ways Level 3 separation promotes competition and positive outcomes for consumers. Therefore, our clear position is that Level 3 is the appropriate degree of separation for the long term.

Physical separation and Equivalence of Inputs

3.14 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 inputs as RoBT, in respect of the same level of access to Openreach systems. This contribution is explicitly recognised in the definition of EOI given in the Undertakings²². Until physical separation is achieved, user access controls are designed to enable systems separation for the purpose of delivering EOI.

BT's current systems separation obligations

3.15 The physical separation of operational support systems ('OSS') currently shared between Openreach and RoBT is a key part of Equality of Access, as it reduces the capability and incentive of BT for non-price discrimination. As such, Section 5.44 of the Undertakings requires BT to:

- Physically separate Openreach OSS from the rest of BT by 30 June 2010;
- Design all new Openreach systems to be separate from the rest of BT;
- In the interim, until full physical separation is achieved, deliver a logically separate OSS capability for certain product groups according to binding milestones;
- Review regularly with Ofcom a roadmap for achieving physical separation; and
- Implement user access controls and ensure that they are subject to internal, EAB and independent audit.

Challenges in delivering separation on current timescales

3.16 BT's plan to deliver physical systems separation is set out in a roadmap, with specific milestones, and reviewed with us as part of the Undertakings. In late 2008, progress on the current roadmap indicated that BT had been on course to meet most of its separation commitments if it had pursued that to the exclusion of certain other objectives. However, BT shared with us some challenges which suggested that pushing hard to come close to meeting the current milestones might neither be the best approach, nor one that can readily be achieved in practice within the original timeframe. In the context that much progress had already been made in delivering on the Undertakings, we were willing to consider how these challenges might justify changes to the remaining Undertakings commitments.

²² See paragraph 2.3 above

Requirements of Openreach's customers

- 3.17 The first challenge is that Openreach has a number of competing demands on its IT expenditure and resources. To come close to meeting current separation milestones would have required BT to devote a high percentage of its resources to the separation programme until mid-2010. But the other claims on resources are also important. These have inevitably evolved since the Undertakings were agreed. One of them is BT's programme to upgrade its local network, to support higher-speed broadband services on its NGA network. That programme will consume significant resources and supporting systems.
- 3.18 In addition, Openreach's customers have many demands for new products and service improvements that would also require systems development resources. Openreach's delivery of these new capabilities can provide new ways for CPs to innovate and compete for customers. In current economic conditions, it is important that Openreach's resources deliver the best value for its customers – not only BT's downstream businesses but also other CPs.
- 3.19 It is useful to describe further the link between systems separation and those product and service improvements. Openreach delivers systems separation mainly by using the system known as the Equivalence Management Platform ("EMP"). EMP is the strategic system used to handle CP transactions (ordering, provisioning, maintenance and fault management) in an equivalent manner between all of Openreach's customers. EMP has to support all end users consuming EOI products such as LLU and WLR, whether they are customers of BT's downstream businesses or of other CPs.
- 3.20 EMP underpins Openreach's delivery of its EOI product milestones and ongoing EOI compliance after those milestones have been achieved, As well as delivering systems separation, the EMP is used to deliver the growing set of CP demands on Openreach services and to support the delivery of new NGA services.
- 3.21 It is clearly desirable to have a single trading platform (i.e., EMP) in place which enables all CPs to consume all EOI products in an equivalent way, but it should not then become a bottleneck for future developments. However, from the start of 2008 it was apparent that Openreach's ability to deliver the aggregate demand from industry for EMP developments across the WLR, LLU, and Ethernet product range was falling significantly short. The rate at which new product functionality was being deployed on EMP was significantly less than the rate at which new requirements were being registered, creating an ever expanding backlog of unfulfilled demand. In addition, Openreach was having difficulty in providing its customers with a concrete roadmap of future delivery dates more than three months ahead.
- 3.22 The current EMP release 'consumption model' and associated product development lifecycle processes have been struggling to deliver the aggregate industry demand for product developments. The consumption model concerns the ability of CPs to align their own systems with new EMP releases so that they can make use of all the latest features and functionality in a slick, timely and cost-effective way. Two key weaknesses in the current model need to be overcome. Firstly, CPs need to be able to consume new functionality in a more flexible and cost-effective manner. Secondly, EMP development capacity needs to keep pace with aggregate demand for new requirements.

- 3.23 Given this context, the forward development programme for the EMP shows that it would be extremely challenging to deliver the developments required to meet Openreach's regulatory obligations for systems separation at the same time as the developments required by Openreach's customers and the NGA roll-out programme. This would create an unacceptable risk that software upgrades (or 'systems releases') introduced using the EMP would be delayed or of insufficient quality. It would also threaten the stability of the EMP, causing potential service disruption to all Openreach customers. These risks would still exist despite Openreach's plans to significantly increase the amount of capacity that the EMP can process in each systems release.

Separating business customers

- 3.24 The second challenge to the separation obligations timescales is that BT has taken some time to decide on an appropriate solution for delivering separation for its systems in relation to business customer records, for reasons explained in more detail below. There is a strong inter-dependency and trade-off between the speed of migration to separate systems and the potential impact on the business customer experience.

Building the business stack

- 3.25 The systems serving the various BT divisions are organised into 'stacks'. Stacks are integrated sets of commercial and in-house software packages that provide the functionality that the business unit needs. In the early stages of systems separation BT planned to have three stacks:
- BT Retail – to serve the high volumes of consumers and small/medium businesses;
 - BT Global Services and BT Wholesale – a shared stack to serve major corporate customers and wholesale customers; and
 - Openreach – to provide access services.
- 3.26 The rationale for those separate stacks is the different requirements for each business. BT Retail serves large numbers of customers who take a limited range of services and who interact with BT via call centres or on-line. BT Global Services serves a limited number of major customers who consume a wide range of products, have special contracts, and who interact through a dedicated sales and service team. Having separate stacks also allows greater responsiveness to new requirements as they are developed and supported by different teams, albeit sometimes utilising common components.
- 3.27 More recently, BT decided to add another separate stack called 'BT Business', to meet the growing need for specific functionality and dedicated resources to support small and medium businesses within BT Retail. BT's initial view was that this would not have a major impact on timescales as the solution would be based on available software. The intention was to either use mostly commercial software or to reuse existing software. However, despite several attempts, BT did not identify a cost-effective separate solution for BT Business.
- 3.28 BT has finally decided to have just two stacks, one for residential customers and one for all business customers. The combined business stack will be based on the work already underway to build the Global Services stack. This delay has, however,

eliminated all contingency in the plans for separating and migrating business customers, because it will take time to complete development of the business stack.

Business customer migration

- 3.29 Despite the delay relating to the decision on the business stack, trying to accelerate separation timescales in order to compensate could create negative experiences for business customers. For example, migrating to interim, tactical systems would not be a practical solution. BT is using its Equinox systems as a tactical approach to support new business customers. However, according to BT, Equinox uses a number of manual processes and would be very costly to enhance to support significantly greater volumes and complex customer migrations. Equinox would also not deliver Level 2 separation, so using it as an interim approach would require a subsequent further migration onto a different system, which would risk disruption to customers.
- 3.30 Alternatively, migrating customers too quickly in order to meet the original timescales could also have a negative impact on those customers. Once the business stack is built, BT will migrate customers over a period of time on a structured basis. From the start, BT migrated residential consumers on a per-customer rather than a per-product basis. This means that BT only migrates a customer once all their products and services are built and supported on the new systems. At that point BT migrates all the customer's data (e.g., history, billing, payment, products and services) to the new systems and removes the data from the old systems.
- 3.31 Customers' billing relationships are maintained at the customer or billing account level. Advisors either use the old systems or new systems. This ensures that an advisor has a full view of all of a customer's inventory and information and can deal with the customer in an appropriate and effective way. Migrating on a per-product basis rather than a per-customer basis would mean that customers would have products on different systems. They would get multiple bills (perhaps even covering different billing periods) and they would need to speak to different call centres/advisors about each of their products.
- 3.32 BT's front-end sales/service agents who support customers also need to be able to continue to support customers' requirements when services are moved to EOI. This involves changes to processes and customer experience for both customers and BT agents. This is best done from both perspectives on a per-customer, with a single rather than multiple product migration approach to the new process and systems.
- 3.33 Whilst some residential customer migrations can be more complex (i.e., where customers use multiple products, features and functionality), business customers typically use many more different products and services. Therefore, per-product migration could carry a much higher risk to billing and customer service for businesses. The business migration programme also includes the many products and services that are not subject to regulation or dependent upon EOI inputs from Openreach. These represent the vast majority, both numerically and in revenue terms.
- 3.34 BT's plan is therefore to limit these risks by careful migration management. As with residential customers, business customers' records would only be migrated to separate systems once all the products that a given customer uses are available on the new stack. In general, BT would expect to migrate customers with the most complex product mixes later in the separation programme. This would tend to suggest that those customers with simpler requirements, using the higher-volume

EOI products, would be migrated earlier onto the new business stack, giving the separation programme good momentum. Additional customers could then be migrated as business stack upgrades add further functionality that will move the stack towards supporting additional products.

- 3.35 The final constraint on when the last business customers migrate onto the new stack would be the timing of when the last BT legacy products used by those customers are replaced with 21CN equivalents. Currently BT's plans for 21CN (particularly 21CN voice) are not known and therefore it is not possible to be definitive about when the migration process would complete.

The proposed changes to separation obligations: general features

- 3.36 BT has stated that it remains committed to achieving full physical separation. This continuing commitment is reflected in the proposed revised wording of the Undertakings (see Annex 5), and in commitments to achieve a high degree of customer records separation by June 2010 and continuing momentum thereafter.
- 3.37 However, BT has proposed various changes to its Undertakings commitments on systems separation. These changes are based on a few core elements:
- The time taken by BT to conclude how business separation should happen. BT has now confirmed that it will have just two systems stacks – one for BT Retail, and one for all business customers (including Global Services and BT Wholesale);
 - Using per-customer migration of customer records rather than per-product migration, to minimise disruption for larger and more complex customers during the migration process;
 - Delivering Level 3 physical systems separation in line with BT investment decisions and Openreach customer priorities, rather than according to specific timescales. This should reduce Openreach's implementation costs (and so reduce prices to its customers) and it should give more flexibility to deliver new developments requested by Openreach's customers; and
 - Proactive reviews of progress, including through ongoing audits and road maps, to promote continued progress towards full physical separation and to avoid competition concerns in the meantime.

Impact of proposed changes on separation milestones

BT's current Undertakings obligations on separation

- 3.38 BT's current remaining Undertakings obligations on separation relate to both the migration of customers using specific products²³, and the separation of physical systems. They are set out in Figure 3.1 below.

²³ Those customers using such products at the time that the Undertakings were signed

Figure 3.1 BT's main current systems separation obligations

Commitment	Type	Milestone
WLR 70% IBMC	Product	30/06/09 ²⁴
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

- 3.39 We are proposing changes to both the product and systems obligations on BT. First we discuss the changes to BT's systems separation obligation. Then we cover the product-related changes.
- 3.40 Our proposals, if adopted, would require BT to remain committed under its Undertakings to the delivery of Level 3 (full physical) separation. However, our proposed variation does not set a revised date for when this would be achieved. Instead, we consider that this would be achieved through the operation of the revised commitments described below. Level 3 separation would be driven more by pragmatic considerations, such as when old information systems hardware is replaced or rationalised. The focus in the near term would be on achieving significant progress in Level 2 separation whilst providing flexibility to deliver Level 3 physical separation, subject to EAB monitoring.
- 3.41 Instead of one single milestone for Level 3 separation, we therefore propose that separation of customer records should continue to apply at Level 1 separation (user access controls) and that a number of milestones should be added in relation to 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. Our proposed new systems separation obligations are set out in Figure 3.2.

²⁴ BT has indicated to us that there is a risk that it will not achieve 70% migration until about three months after this date, 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 ²⁵	Level 2	30/06/10
90% customer service records	Level 2	31/12/12
A % of customer service records to be advised ²⁶	Level 2	30/06/14
Physical systems separation	Level 3	Not specified

- 3.42 The milestones for Level 2 separation reflect BT's progress in separating business customers. By June 2010, only a very small number of business customer records will be separated at Level 2. The reason for this is that the new combined business stack will not be operational by then. The limited business customer separation at that time will be achieved using BT's Equinox system²⁷, which has been a tactical solution to meet the requirements for EOI supported delivery for new customers after Ready-for-service ("RFS") dates²⁸. The December 2012 obligation is then designed to reflect Level 2 separation for about half of business customers.
- 3.43 The Level 2 milestone for June 2014 would be advised by BT to Ofcom by no later than the end of 2011. Ofcom considers that it is not appropriate to agree now what degree of Level 2 separation should apply at that time. This is because it is difficult to predict realistic targets until the new business stack is in place and BT's business customer records migration programme has started in earnest.
- 3.44 BT has informed us that in implementing its business solution it can re-use some capabilities developed in the significant build and migration work to date. BT estimates that, as a result, well over 20 per cent of the work needed to build the new combined business stack is already complete, although delivering business migration is likely to present more complex challenges as the planning continues.
- 3.45 Subject to emerging implementation issues, BT's best view at the moment is that early use of main elements of the business solution will commence in the latter half of calendar 2010, when consumer migrations are complete. Also, initial migration trials (probably based on BT's internal use) are expected to begin in late 2010 or early 2011. External business customer migrations then should begin in mid-2011 and ramp up over the next year to mass migration in the first half of 2012.

²⁵ 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

²⁶ BT would advise Ofcom of this percentage by the end of 2011 at the latest

²⁷ Equinox has been used as a tactical solution to meet the requirements for EOI-supported delivery for new customers since RFS dates

²⁸ The RFS date is the date from which an EOI product or service is available for use by other CPs and for use by BT (and is in use by BT) to support those End-Users who are new after the RFS date. The RFS date is also the date of the start of migration of the relevant installed base of End-Users.

- 3.46 BT suggests that in the worst-case scenario, it will complete its business stack by mid-2011. It would therefore be in a position to advise us of further percentage milestones by the end of 2011. However, if BT completes its business stack sooner, we would be informed of the June 2014 percentage milestones sooner. This is because our proposed obligation also requires BT to advise us of the further milestones for June 2014 no later than six months after completing the business stack.
- 3.47 When BT has built its business stack and advised us of the further milestones, those milestones would be interpreted by BT and Ofcom in the same way as the new commitments for June 2010 and December 2012. Ofcom would look to ensure that those new milestones represent progress towards a substantial degree of business customer record separation. To promote this, the EAB and Ofcom would actively scrutinise BT's progress in building its business stack and planning for customer migration.
- 3.48 There will be a long 'tail' of business customer records (albeit amounting to only a few per cent of all such records) which will not achieve Level 2 separation until BT completes its 21CN rollout. This reflects the proposed per-customer migration approach. The customers in this tail would typically buy a greater variety of products, some of which will only be ready for migration once replacement products exist on BT's next generation network. BT considers that there is no commercial driver to deliver separation for such products because they are going to be replaced in due course by other (21CN) products. The timing for such replacement products is uncertain. However, given BT's recent announcement that it no longer intends a near- to mid-term migration off its legacy voice network, this tail could extend well into the future.
- 3.49 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, i.e., user access controls. To ensure that those controls work appropriately, BT proposes to continue audits of how those user access controls operate. BT would not apply user access controls for products that are only purchased by BT, such as Featurenet. This is because such products are replicable by other CPs (who can purchase inputs from Openreach) and so the absence of Level 1 controls should not raise any competition concerns.
- 3.50 Note that the contribution of Level 2 separation towards BT's obligation is bolstered by the fact that it will involve a physical separation element. The reason for this is that as applications are separated at Level 2, they will also be migrated to physically separate servers. All of the associated data will be accessed via separated database management systems, which will also be on physically separate servers. Some of the data will continue to reside on shared storage silos, but will be subject to the high levels of isolation and separation provided by the supplier's shared storage software. This type of 'virtualised' storage is commonly used in major computer centres to allow different organisations to benefit from the economies of shared data.

Continuing progress towards physical separation

- 3.51 We are concerned to ensure that progress continues towards full physical separation, as provided for within the new proposed Undertakings text. We propose revisions to the physical separation requirements that provide for greater flexibility in meeting the requirements. However, having provided this flexibility, we would expect substantive progress to be made, at a reasonable pace.

- 3.52 We consider that there are real commercial incentives that will lead BT to implement a certain degree of Level 3 separation. Examples of these incentives include data centre rationalisation, new systems implementation and hardware consolidation and upgrades.
- 3.53 It should be noted that for some 'Common Services' applications, BT does not plan to implement physical separation. Common Services applications include 'Job Recording' - which holds details of closed engineering tasks, for statistical analysis; 'Archiving' - which keeps details of where archived data are held; and 'Stores and Depots' - records where physical stores and equipment are held). We consider that such applications are not strictly operational support systems as they do not directly support the main operational processes such as provide and repair. However, to avoid the risk of inappropriate access to functions or data, they will be separated at Level 1.
- 3.54 A number of safeguards are proposed to ensure that there is continued oversight of BT's progress towards full physical separation. In terms of formal measures, BT would have to:
- Continue to produce roadmaps for completing physical separation and to review these regularly with Ofcom. An example of systems for which progress would be reviewed in this way are two minor network management systems to be used to support BT's next generation access roll-out²⁹; and
 - Continue to subject its separation programme to EAB and external audit, to ensure that Level 1 controls, where they are applied, work sufficiently before a greater level of separation is provided. In the proposed variation to the Undertakings, all of the current audit provisions in the Undertakings have been extended beyond June 2010, with EAB and external audits being required at least every 24 months. There would be a similar Undertakings obligation to cover audits for the proposed formal separation and product EOI milestones.
- 3.55 There would also be some more informal safeguards to promote progress towards both Level 2 and Level 3 separation:
- for a clearer view on Level 2 separation, we plan to ask the EAB to monitor - at a greater level of detail than is set out in the formal Undertakings milestones - BT's progress in delivering the business stack and customer migration after December 2012; and
 - BT has confirmed that all proposed systems investment programmes will be reviewed at the BT Design Council³⁰, so that opportunities for separation are properly considered as they arise.

²⁹ These systems, called V21 and NH21, are concerned with equipment configuration and performance monitoring respectively. We mentioned BT's need for systems support to manage its Fibre-to-the-Cabinet (FTTC) NGA infrastructure in our consultation document 'Proposed variation to BT's Undertakings under the Enterprise Act 2002 related to Fibre-to-the-Cabinet' (<http://www.ofcom.org.uk/consult/condocs/fttc/fttc.pdf>). These two systems will be shared between BT Operate and Openreach and will be subject to user access controls until Openreach develops new systems for NGA network management.

³⁰ 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.

Question 1 Do you agree with our proposed changes to BT's systems separation obligations? If not, why not?

Proposed new product EOI obligations

- 3.56 As discussed above, the proposed change to a per-customer migration approach produces a tail of customers whose products may not be migrated to Level 2 separation for some time. This implies that it is not suitable to continue to assess progress in achieving product EOI using the current 100 per cent IBMC measures. This is because it would not be possible to give clear and meaningful dates for when full migration could be achieved for individual products such as ISDN2 or ISDN30.
- 3.57 BT has therefore proposed an alternative measure of progress on product EOI. This measure is the percentage of customers - measured by 'legal entities' - that is migrated to using EOI products. A customer would be migrated once all the products used by that customer are available on the business stack (following upgrades to the business stack). The proposed new product EOI milestones are produced 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 ³¹	Level 2	30/06/14

- 3.58 The measure of the extent to which BT has migrated existing customers to using EOI products would be the percentage of 'legal entities' who have been migrated away from the legacy services to using fully equivalent EOI products. The term 'legal entity' has been used to provide finer granularity in assessing migration than the term 'customer'. For example, a large bank may well consist of several thousand legal entities, and some of them may be migrated earlier than others because of the mix of products they consume. Using the legal entities measure as the migration target encourages migration at the earliest opportunity because BT can better achieve its migration targets by migrating sooner those legal entities with a simpler product mix.
- 3.59 It should be noted that the percentage targets for legal entities migrated to using EOI products exceeds the percentage targets for separation of customer service records at the same dates. This is because the last few per cent of legal entities to be separated at Level 2 would be associated with the larger business customers and would therefore account for a disproportionately high share of customer service records.

³¹ BT would advise Ofcom of this percentage by the end of 2011 at the latest

3.60 The proposed new measures of product EOI assess progress in migrating customers across a *range* of relevant products. It is therefore proposed to remove the current IBMC measures of progress for *individual* products such as WLR3, ISDN2 and ISDN30. Annex 5 sets out the legal wording for this revised commitment. In summary:

- the products to which IBMC dates no longer apply would be added to the list of 'Measured Products' in the Undertakings; and
- as BT supports more of those products on its business stack, it will be able to migrate any customers whose products are now all supported by that stack. In this way BT would complete a higher percentage of migration against the new measure.

3.61 The list of Measured Products describes the EOI input products provided by Openreach to enable BT's competitors to provide equivalent products. The products to be added to the Measured Products list (and the associated BT products that consume them and are relevant to this Undertakings variation) are listed in Figure 3.4. Note that some of these input products are already included in the Measured Products list.

Figure 3.4 Changes to the Measured Products list

BT downstream product	Openreach input on Measured Products list	Already 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 ³²	Wholesale Extension Service	Yes

3.62 Details of the products in Figure 3.4 for which BT has previously been granted exemptions to its Undertakings obligations are discussed in Section 4.

³² Megastream Ethernet is the currently exempted product. Its successor products consume the Wholesale Extension Service input on an EOI basis.

- 3.63 With an end to individual product migration milestones, there is a risk that the migration progress of specific products would go untracked, particularly if they account for a small proportion of overall product volumes. So to provide continued scrutiny of progress on these products, it is proposed that the six-monthly roadmap reviews of Undertakings progress would continue to monitor progress made in migrating customers who consume some of these (mainly lower-volume) products. This is intended to provide sufficient transparency to address any potential competition concerns that may arise in future in relation to individual products. Also, as BT develops its detailed plans for migration to the business stack, we would use road map reviews to encourage appropriate priority to be given to migrating customers with EOI products.

Recent breach of current IBMC milestone on ISDN2

- 3.64 The proposed change of approach to measuring product EOI is relevant to how we have decided to address a recent breach of BT's Undertakings milestones. That issue is therefore dealt with next in this section.
- 3.65 In late 2008, BT informed us that it was highly unlikely to meet its milestone obligation for ISDN2 of 100 per cent IBMC by 31 March 2009. ISDN2 is typically consumed by small businesses. On 25 March 2009, BT formally confirmed that it would miss the relevant milestone.
- 3.66 The reason that BT has missed its IBMC milestone relates directly to how it has developed its solution for delivering systems separation for business customers. As set out above, BT has taken some time to conclude on how it would migrate business customers. But migration of those business customers with ISDN2 services cannot start until BT has finished building its new combined business stack.
- 3.67 In December 2008 we announced that we would assess the scope to refocus BT's systems resources in line with industry priorities, which is the purpose of this consultation document. We stated then that we would consider the remaining Undertakings milestones – including 100 per cent IBMC for ISDN2 - as part of this work. Therefore, the ISDN2 breach has been considered in the context of the proposals we are now making, rather than on a stand-alone basis.
- 3.68 We propose to handle BT's failure to meet the ISDN2 milestones in a way that is consistent with our general proposal to stop using individual product IBMC dates to measure progress on product EOI. In accordance with this approach, we do not consider it necessary to take any further action to remedy the ISDN2 breach.
- 3.69 Our approach to any other breaches of the Undertakings that might occur before our final decisions are published following this consultation exercise will be aligned with the content of those decisions.

Question 2 Do you agree with our proposed change of approach to measuring BT's progress on product EOI? If not, why not?

Proposals for additional Openreach product and service commitments

The prioritisation process

- 3.70 Whist the separation requirements in the Undertakings remain important, we stated to BT that we were willing to consider some of Openreach's resources being diverted towards developing more of the product and service improvements required by Openreach's customers in the short to medium term. Before these discussions, only a very limited amount of Openreach resource was expected to be available to meet these customer demands.
- 3.71 To this end, BT and Ofcom both considered that a cross-section of Openreach's customers should participate in defining which Openreach developments should be prioritised. Also, we saw value in using the OTA to facilitate these discussions independently. We considered this to be a natural role for the OTA as it was already involved with the detail of Openreach's product and service developments in its existing work.
- 3.72 Between December 2008 and May 2009 Openreach engaged with its customers, the OTA and Ofcom. The objective of this work was to develop a consensus view of Openreach's customers' highest priority requirements for delivery over the next 18 months. Openreach would then use this as an input to produce an 18 month product development roadmap to describe the firm commitments it would deliver upon.
- 3.73 The engagement process comprised a number of multilateral briefing sessions (hosted by the OTA), along with a series of trilateral meetings (Openreach, OTA, an individual CP) with a number of key CP stakeholders. Existing industry groups covering different product suites – LLU, WLR, Ethernet – were also involved in defining CPs' priority requirements. At several stages the overall proposals were shared with the key industry groups to obtain positive confirmation that they reflected general consensus.
- 3.74 Multi-lateral workshops were held to allow CPs to convey the high-level benefits they anticipated from each development. These also gave an opportunity to assess how complex and costly each development would be, both for Openreach to produce and for CPs to consume.
- 3.75 We consider that the process of engagement has worked well and that this has been helped by the facilitation provided by the OTA.

Output of discussions: Openreach commitments

- 3.76 Openreach has published its full roadmap of developments arising from these discussions. That roadmap runs from the end of 2009 to the end of the fiscal year 2010-11, and covers most of the top priority requirements identified by CPs. It also covers Openreach's business-as-usual deliveries. Full details of the roadmap and an explanation of each individual element are available for Openreach customers to view on Openreach's website³³.

³³ See <http://www.openreach.co.uk/orpg/customerzone/roadmap/commitments.do>

- 3.77 To inform this consultation process, a number of general points are worth making about the Openreach roadmap. Firstly, we were keen to see a package that included some positive outcomes for those CPs serving business customers. This is because the systems separation delays mainly involve business customers.
- 3.78 A second and related point is that many of the developments are about improvements to existing products, processes and systems. Given the limited future 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 wanted to increase customer satisfaction and reduce costs of process failures. Three headline work streams were identified to address this key issue:
- Improve the EMP consumption model;
 - Improve data integrity; and
 - Improve the documentation of products, processes and associated system releases.
- 3.79 The 'consumption model' is a notable area for improvement. Currently, CPs struggle to quickly consume new functionality. It can take up to 12 months from a new EMP release until a CP can use it. This means a delay for CPs in using the functionality that they want and a delay for Openreach in recouping its development costs.
- 3.80 There is a variety of problems, in the development lifecycle, from requirements capture/sign-off, to solution design, to testing methodology, to documentation. Openreach and its customers are in discussion to reach a common understanding of the underlying causes of these problems and how to resolve them. Note that this issue affects CPs that use the 'B2B' trading interface with EMP. It does not arise where CPs interface with EMP using the web-based portal (generally used by Ethernet CPs and smaller LLU CPs).
- 3.81 When looking at products rather than service improvements, each of the product communities (LLU/WLR/Ethernet) has identified a relatively small number of mission-critical product improvements. Most of the high priority issues relate to improvements in service to business customers. Some of these are described in Figure 3.5, which gives some examples of the Openreach developments arising from this process.

Figure 3.5 Examples of additional Openreach developments

Item	Description	Benefits	Openreach customers
x-hour repair	Fast repair rental product within x hours	Simple, consistent service and flexibility to offer better service level	Initially all LLU & WLR CPs
Service	Four consistent levels of customer care across	Equivalence in WLR & MPF services. Premium	Initially all LLU &

Item	Description	Benefits	Openreach customers
harmonisation	WLR & LLU	options/bolt-ons to allow improved service. Simpler Openreach operations	WLR CPs
Special Faults investigation - Enhancements	Range of enhancements to existing SFI product	More structured approach. Range of specified tasks. Greater transparency for billing queries	LLU CPs
Data integrity	Improved data integrity for products managed on EMP platform	Reduced cost overheads by avoiding manual interventions to work out true position on orders, faults and billing	LLU & WLR CPs
Documentation	Improve documentation that CPs use to consume Openreach products – including process maps, web site design	Common process understanding. Ease of doing business Enables WLR2 to WLR3 system migration.	EMP system users – LLU, WLR, NGA, Ethernet
MPF location data	Ability for Openreach to locate exact address of individual MPF lines on multi-MPF installations, not just by postcode	Better targeting of lines used by CP/end user. Improved service level plus better response for the emergency services	LLU CPs
Next Generation 2GB & 10GB	Launch of Openreach's next generation 2.5Gbps and 10Gbps capability to replace existing technology	Reduces operation costs to the benefit of both CPs and Openreach.	CPs offering high bandwidth services to typically, central government or businesses in the IT or Financial sector
Ethernet strategic systems stack	A next generation system stack for Openreach's Ethernet portfolio. Opportunity to build in system enhancements identified by customers and Openreach	Service improvements and dialogue services (e.g., reduced lead times, KPI stats, exchange/fibre mapping etc)	All CPs
Ethernet	A new product that will	Increased commercial	Ethernet & LLU CPs

Item	Description	Benefits	Openreach customers
Aggregation	aggregate CPs' access circuits, such as Ethernet Access Direct, onto their backhaul circuits	flexibility for CP	
10G – EBD/BTL	Introduction of a 10G Ethernet Backhaul Direct (EBD) product and enhancement of the Bulk Transport Link (BTL) to support 10Gbps channels.	Effective solution to meet CP specific requirement	Ethernet & LLU CPs

- 3.82 We note that specific deliverables have not yet been fully specified for some of the roadmap elements – mainly consumption, documentation, and data integrity. This is partly because these requirements were not previously covered by formal development requests to Openreach, so there is still a need to work with industry and the OTA to fully define requirements and to complete feasibility assessments as soon as possible. Openreach has allocated capacity for these developments within its roadmap. Once the specific deliverables have been identified and agreed, they will be scheduled into the appropriate roadmap slots under strict change control rules.
- 3.83 The roadmap for these developments begins in November/December 2009 as part of Openreach's R1200 software release. To deliver the relevant elements within that release, Openreach has already taken decisions at its own risk to commit resources before knowing the outcome of our consultation process. Openreach has, however, acknowledged this risk by scheduling relatively few developments in the R1200 release compared with later software releases.
- 3.84 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. Openreach also refers to the following within the document published on its website³⁴:
- a new product development process (Concept to Market, or 'C2M') that incorporates much faster response times to customers' statements of requirements; and
 - a change control process governing its overall product development roadmap.

³⁴ See <http://www.openreach.co.uk/orpg/customerzone/roadmap/commitments.do>

- 3.85 Openreach has also 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 should provide for better long-term planning for Openreach and its customers.

Undertakings variation to underpin delivery of the new Openreach commitments

- 3.86 Given the proposal to redirect some resources from systems separation obligations towards more Openreach developments for its customers, we consider it important to obtain a commitment that the Openreach developments would be delivered in practice. We therefore propose to introduce some Undertakings requirements on Openreach, described below, for these specific developments³⁵.
- 3.87 Firstly, Openreach would have to publish a roadmap covering the additional developments, with a forward look period of 18 months.
- 3.88 Secondly, Openreach could make changes to that roadmap only in accordance with specific change control criteria. We consider that some flexibility to change is sensible as Openreach's customers may change their view on the relative merit of specific proposed developments. However, as these extra developments are part of a regulatory obligation rather than a commercial decision, we consider that Openreach's customers' interests should be protected by tighter change control criteria than usual. Essentially, changes to these specific developments would take less account of Openreach's commercial considerations than changes to other products.
- 3.89 Finally, Openreach would have to replace any developments that are removed from the roadmap with others of comparable benefit to its customers. The proposed Undertakings commitment also obliges Openreach to make changes to the agreed roadmap through customer agreement, achieved via OTA facilitation. We are confident that the OTA's involvement would allow the interests of Openreach's customers to be fully reflected if such changes are made.

Question 3 Do you agree that the package of additional Openreach developments and the new Undertakings commitments that relate to them are appropriate? If not, why not?

Implementing these changes into the Undertakings

- 3.90 The proposed legal changes to the Undertakings in this section are set out in full in the variation to the Undertakings, which appears in Annex 5 of this document.

³⁵ see Annex 5 for the proposed variation to the Undertakings

Section 4

Consequential amendments to current exemptions to the Undertakings

Introduction

- 4.1 Section 3 covered the main policy issues and the related key proposed changes to the Undertakings that directly relate to BT's system separation obligations. This section covers some more detailed proposals on BT's obligations that result largely from the proposed changes to systems separation and, to a lesser extent, the delays in BT's rollout of its 21CN. The first part of this section considers in detail a number of individual products for which exemptions to the Undertakings have previously been granted to BT and which are now impacted by the revised approach to systems separation. These are the exemptions proposed to be covered by the 'Measured Products' approach described in paragraphs 3.56 to 3.63.
- 4.2 We then consider two further exemptions impacted by the delay to full physical separation and/or BT's 21CN plans and which need to be updated.

Amendments to current exemptions to the Undertakings

- 4.3 In limited circumstances Ofcom, generally, upon request from BT, may grant BT an exemption from specific Undertakings obligations.
- 4.4 The proposed changes to the systems separation obligations set out in Section 3 have a knock-on impact on a number of exemptions based on the current systems separation obligations. As set out in Section 3, the per customer migration process means that for a number of products, it is no longer 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. A number of previously agreed exemptions have a fixed IBMC date which aligns with the current date for full systems separation, namely 30 June 2010³⁶.
- 4.5 The specific exemptions that are impacted by this new approach are:
- Featureline
 - Featurenet
 - Megastream Ethernet
 - Redcare CCTV
 - WaveStream Connect

³⁶ The current IBMC date for WaveStream Connect and Wavestream Regional is slightly later, at 30 September 2010.

- WaveStream Regional
 - Media and Broadcast
- 4.6 We consider that the move to a 'per customer' migration approach and hence, the likely consequential delay in BT migrating all its legacy customers for the products listed above, to the relevant EOI products is reasonable, as it would ensure that customers do not experience disruption by having different products supported on different BT systems. An alternative approach would likely lead to operational challenges for BT and a poorer customer interaction with BT customer service staff.
- 4.7 We set out further below the specifics of these exemptions and the impact of our proposals on the products impacted by the exemptions. We then discuss proposed amendments to two exemptions which, whilst not impacted directly from the move away from IBMC milestones, need to be reconsidered in light of either the revised approach towards systems separation or the delays to BT's 21CN deployment. Finally we provide an assessment of the impacts of the proposed changes. The specific exemptions involved are:
- Featurenet SRUs: this is subject to an existing Undertakings Exemption, which depends on out-of-date expectations about the timescales over which BT would develop its next generation core network. We are therefore using this consultation as an opportunity to propose changes to the relevant Undertakings obligation; and
 - Messaging Services and Bill Direct: this is currently the subject of an Undertakings Exemption, but the proposed changes to BT's systems separation obligations mean that a new Exemption is needed.

Exemptions resulting from the revised Measured Products approach

Featureline

What is it?

- 4.8 Featureline services enable businesses to link together a number of lines serving separate (typically smaller) premises in a way that gives the organisation the same functionality as a single site private branch exchange (PBX). The service is hosted on a BT telephony switch. There are three product variants - Featureline, Featureline Compact and Featureline Corporate/Embark:
- Featureline and Featureline Compact are single-site centrex³⁷ solutions that offer similar functionality to a small telephone system. These services can accommodate up to a maximum of 60 extensions on each site. This includes advanced PBX like features such as call hunting and free short code dialling of extensions
 - The Featureline Corporate / Embark product provides virtual private networks using twisted pair (analogue) and digital (2 Mbit/s) access lines. This enables customers to link small and large sites together into a single virtual corporate

³⁷ Centrex (central office exchange service) is a service whereby PBX-like services are provided (typically remotely) by a service provider without the user having to purchase their own facilities

telephone network which delivers similar functionality to a PBX, including a corporate dial plan.

What is the scope of the exemption?

- 4.9 Under paragraph 5.46.1 of the Undertakings³⁸ Openreach is not permitted to supply any product to any other part of BT unless it also offers that product to other Communications Providers on an EOI basis, other than where expressly exempted.
- 4.10 The Featureline products are included under the supply provisions set out in paragraph 5.46.1 of the Undertakings being sold by downstream parts of BT using inputs (and processes) that are provided by Openreach to support their delivery and maintenance. In December 2006 Ofcom and BT agreed an exemption which meant that Featureline would not be required to consume an EOI input from Openreach until 31 March 2008 for new supply and until 30 June 2010 for the installed base³⁹.
- 4.11 The exemption also permitted BT Wholesale and BT Retail access to Openreach systems until the RFS date was achieved and thereafter for the installed base until the IBMC date.
- 4.12 On 27 March 2008, we agreed to update the RFS date to 31 May 2008, since a CP requested delay in a software release on the EMP system (Release 700) had delayed the deployment of the relevant EOI solution. The IBMC date remained unchanged as the 1 July 2010.
- 4.13 BT achieved the RFS date of 31 May 2008 for Featureline, with new Featureline customers being supplied using EOI inputs as from that date.

What is the reason for the proposed change?

- 4.14 Prior to the agreement of the Undertakings the Featureline products were based on systems and processes integrated across the BT Group, which, following the agreement of the Undertakings, resulted in BT Retail, BT Global Services and BT Wholesale needing to access Openreach systems to continue to support the product. The use of these products, systems and processes was allowed, by the exemption, to continue for both new supply and the installed base until the RFS date of 31 May 2008. Since 31 May 2008 new supply of Featureline has been supported using EOI products.
- 4.15 However, the installed base continues to be supported on non-EOI products using integrated systems. The current exemption allows this to continue until 30 June 2010. The 30 June 2010 date was set in the exemption to align the requirement to complete migration of Featureline onto EOI products with the date for the completion of systems separation in the Undertakings.
- 4.16 The exemption did not explicitly state the approach BT would take to achieving the IBMC. This could be achieved either by migrating customers onto separate systems or by replacing the Featureline product with a new product on 21CN. However, BT has now stated that it does not intend to replace its legacy PSTN platforms with a

³⁸ Openreach will not supply any product to any other part of BT unless it also offers that product to other Communications Providers on an EOI basis.

³⁹ See <http://www.ofcom.org.uk/consult/condocs/btrequests/statement/statement.pdf>

21CN equivalent in the near to medium term. This leaves OSS separation as the only solution open to BT.

- 4.17 However, as discussed in Section 3, it is no longer achievable to complete systems separation by 30 June 2010. Also as discussed in Section 3, the per-customer migration process means that for a number of products it is no longer appropriate to use the IBMC measure to assess progress on migrating 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. Wholesale Line Rental is the Openreach EOI input to Featureline and, given that it would be considered a Measured Product, it would consequently be subject to the revised obligation which would provide for 95 per cent of customers consuming one or more of the Measured Products to be migrated by December 2012.

What is the impact?

- 4.18 Communications Providers typically already develop their own downstream products that compete with Featureline based on the EOI inputs that have been available from Openreach as of the RFS date. We therefore do not consider that there is a significant competitive risk in BT's downstream, pre-RFS, customer base migrating to the EOI inputs at a slower pace than previously anticipated.
- 4.19 New Featureline customers installed after the RFS date are already implemented using EOI products from Openreach. In the longer term, new technology implementations are likely to substitute for legacy Featureline services, and hence the competitive significance of the existing Featureline implementations is likely to decline. The proportion of new Featureline lines provided on an EOI basis has increased since RFS and is currently over 60 per cent.
- 4.20 Further, if we were not to agree to the exemption, and BT were to withdraw the product, there could be significant disruption to end users.
- 4.21 A potential concern expressed by CPs in the past is that customer inertia due to the complexity of migrating customised dial-plans to other CPs could be a barrier to competition. Since then, BT has worked with industry to review and resolve the evident migration issues in order to address this barrier to switching. We also observe that any difficulties associated with the migration of dial plans are independent of the physical inputs that CPs and / or BT consume.

Question 4 Do you agree that, as a consequence of the revised approach to customer migration to EOI products, Ofcom should agree to this request from BT to remove the IBMC date of 1 July 2010 for Featureline?

Featurenet

What is it?

- 4.22 Featurenet provides voice PBX-like and Virtual Private Network (VPN) features supported across multiple customer sites hosted on the BT network. A single Featurenet customer may have several thousand lines spread over many sites. Featurenet customers are typically medium to large corporate organisations and government agencies.

- 4.23 Featurenet services are hosted on DMS-100 exchanges which support a variety of different connection mechanisms, dependent on the size of the customer site:
- Large customer sites connect to Featurenet through a Private Branch Exchange (PBX) located at the customer premise ("Featurenet 1000").
 - Medium sized customer sites use Small Remote Units (SRUs) located at the customer premises. These SRUs are in turn connected to a remote Advanced Services Units (ASUs) located on BT premises ("Featurenet 5000 with customer sited SRU").
 - The smallest customer sites are cabled directly through the access network to host SRUs located at BT local exchanges. These SRUs are in turn connected to ASUs which may be located elsewhere in the BT network. ("Featurenet 5000").
- 4.24 A customer with multiple sites may use a different connection mechanism at each site.

What is the scope of the exemption?

- 4.25 In 2006, BT requested an exemption for (copper) Featurenet lines. This exemption covered both the physical delivery of those lines by Openreach and the processes by which these lines were delivered and maintained. BT's request set an RFS date of 1 July 2008 to allow time for Openreach to develop an input product for bulk MPF provisions. This was required so that when a customer with multiple lines ordered Featurenet, the lines could be provisioned as one order, rather than needing one order for each line. Thereafter the installed base would be migrated to use the EOI product by an IBMC date of 30 June 2010. It was BT's intention at the time to replace Featurenet with a new product on 21CN, and as such the original exemption allowed Ofcom and BT to agree a different IBMC date if this 21CN product was not available.
- 4.26 BT also included in its request a commitment to work with other CPs in order to identify any changes necessary to ease the migration of Featurenet like services between suppliers.
- 4.27 Following this consultation, we decided to agree to the request from BT. This agreement included a commitment from BT to a review of the migrations process. The relevant commitment was given in a letter to us in December 2006⁴⁰. In granting this exemption, we stated that we preferred to see Openreach resources concentrated in other areas where there were currently significant competition concerns.
- 4.28 Openreach provided the bulk MPF product to allow EOI inputs to Featurenet copper lines as per the original request. However, at this time (June 2008), BT highlighted to us a concern not raised in the initial exemption. This concern related to the way that wiring to SRUs is provided, and is the subject of a separate request which we discuss later in this section.

⁴⁰ Letter to Ofcom from BT signed by Clive Ansell and dated 14 December 2006. See <http://www.ofcom.org.uk/telecoms/btundertakings/exemptionsandvariations/bt211206.pdf>

What is the reason for the proposed change?

- 4.29 Featurenet services are delivered over a variety of different connections (private circuits, bulk MPF etc.). The installed base continues to be supported on non-EOI products using integrated systems. The current exemption allows this to continue until the IBMC date.
- 4.30 Testing of Featurenet lines is currently performed from the DMS100 Featurenet switches. The test capability runs an integrated test that analyses both the underlying access infrastructure and the services that run over it. This function is currently performed by BT Wholesale and BT Operate, directing Openreach resources. If Openreach were to deploy its own test facility this would represent unnecessary duplication of the existing tests, would be costly to implement and would require planned outages of the relevant lines.
- 4.31 BT has now stated that that it does not intend to replace its legacy voice platforms with a 21CN equivalent in the near to medium term and therefore the wholesale replacement of existing Featurenet services with a 21CN equivalent cannot be achieved within the timescale.
- 4.32 Further, since it is no longer possible for BT to complete OSS systems separation by the IBMC date, as set out previously, a different approach is needed. Therefore, the Openreach input to Featurenet, bulk MPF would be considered within the Measured Products approach and would consequently be subject to the revised obligation which would provide for 95 per cent of customers consuming one or more of the measured products to be migrated by December 2012.

What is the impact?

- 4.33 BT has already made extensive progress on EOI Featurenet migrations, in particular regarding:
- The input product for bulk MPF provisions which was developed by Openreach by 1 July 2008, as required by the exemption;
 - Transparency of costs which were published in 2006;
 - Compatibility including cease and re-provide for other CPs which were necessary as the CP products are different from BT's (e.g., CPs buy bulk MPF and construct their own VPN services); and
 - Number Portability for Featurenet which has been implemented in line with the results from three industry working groups.
- 4.34 Whilst we recognise that migrations from Featurenet may be complex, it is our opinion this is a function of the nature of voice VPN products rather than any competitive advantage BT enjoys through non-EOI access to products or via the absence of full systems separation.
- 4.35 New Featurenet customers installed after the RFS date are already implemented using EOI products (except where they are covered by the exemption we discuss in paragraphs 4.75-4.100) from Openreach and the charges for both EOI and non EOI services are financially and commercially the same. Since the RFS date, approximately 60 per cent of Featurenet orders have been met using EOI inputs.

- 4.36 We therefore consider that the impact of the exemption is small. Including the Openreach MPF inputs to Featurenet as a Measured Product means that there will be a reducing number of Featurenet customers supported on systems that are not separated as per the new commitments to be included in the Undertakings. Further, CPs have access to products to let them compete with BT for Featurenet-type services. Lastly, if we were not to agree to the exemption, and BT were to withdraw the product, there could be significant disruption to end users.

Question 5 Do you agree that, as a consequence of the revised approach to customer migration to EOI products, Ofcom should agree to this request from BT to remove the IBMC date of 1 July 2010 for Featurenet?

MegaStream Ethernet

What is it?

- 4.37 MegaStream Ethernet is a wide area, leased line product offering, with a range of access speeds from 10Mbit/s to 1Gbit/s delivered with Ethernet interfaces and with both point-to-point and point-to-multipoint options. Megastream Ethernet is used by corporate and other large customers where high bandwidth services are required across two or more locations, e.g., for email, intranet access and remote application working.

What is the scope of the exemption?

- 4.38 Under paragraph 5.46.1 of the Undertakings, Openreach is not permitted to supply any product to any other part of BT unless it also offers that product to other Communications Providers on an EOI basis, other than where expressly exempted.
- 4.39 In the case of MegaStream Ethernet, a small proportion of the existing installed base use a non-EOI product called ASDH2 (Access Synchronous Digital Hierarchy Stage 2). ASDH2 was developed as a forerunner to a 21CN deployment. BT stopped the new supply of MegaStream Ethernet based on ASDH2 as at 30 September 2006. The replacement EOI product is called Harmonised Ethernet, and is based on 21CN technology.
- 4.40 MegaStream Ethernet based on ASDH2 was granted an exemption in the Exemptions Part 2 statement in December 2006⁴¹. The exemption allowed the installed base plus orders in progress as at 30 September 2006 to be supported on a non EOI basis until the deployment of the 21CN replacement product. The IBMC date was set at 1 July 2010.

What is the reason for the proposed change?

- 4.41 The existing ASDH2 MegaStream Ethernet products were based on a non-EOI product with integrated systems and processes. Because of the delay in building the business stack and migrating business customers, BT will not now meet the June 2010 IBMC date for the full installed base.

⁴¹ Document entitled "Requests from BT for specified exemptions and agreements to its Undertakings under the Enterprise Act 2002, part 2". Statement published 21 December 2006. See <http://www.ofcom.org.uk/consult/condocs/btrequests/statement/>

- 4.42 As a result it is proposed that the current installed end user base of pre-RFS MegaStream Ethernet installations would be considered to form part of the revised obligation which would provide for 95 per cent of customers consuming one or more of the measured products to be migrated by December 2012.
- 4.43 It should be noted that since the cessation of new supply in September 2006, that both new customers and ASDH2 Megastream customers migrating have been supplied on an EOI basis. Therefore this exemption refers only to existing customers with MegaStream Ethernet circuits using ASDH2 technology supplied prior to September 2006.

What is the impact?

- 4.44 The installed base of the relevant MegaStream Ethernet products is currently only around 300 ASDH2 circuits and this number is progressively shrinking as customers migrate to replacement products from BT and other CPs. BT forecasts that the installed base will fall to 110 circuits in 2011, and to zero in 2012. Therefore we consider that the competitive impact of the exemption will, therefore, likely be minimal. Further, if we were not to agree to the exemption, and BT were to withdraw the product, there could be significant disruption to end users.

Question 6 Do you agree that, as a consequence of the revised approach to customer migration to EOI products, Ofcom should agree to this request from BT to remove the IBMC date of 1 July 2010 for Megastream Ethernet using ASDH2 technology?

WaveStream Connect and Regional

What is it?

- 4.45 WaveStream Connect and Regional are point to point data services providing very high bandwidth at single or multiple rates from 1.25Gbit/s to 10Gbit/s running over DWDM (Dense Wavelength Division Multiplexing) derived fibre systems.
- 4.46 WaveStream Connect and WaveStream Regional connect customer sites up to a maximum radial distance of 35km and 70km respectively. Both WaveStream products employ a dedicated fibre path throughout, with the electronics installed at customer premises.
- 4.47 WaveStream is designed for businesses needing dedicated bandwidth for high-capacity, secure optical communications between two sites (e.g., for LAN interconnectivity). WaveStream is typically used by financial institutions, broadcast distribution networks and government departments.

What is the scope of the exemption?

- 4.48 Under paragraph 5.46.1 of the Undertakings, Openreach is not permitted to supply any product to any other part of BT unless it also offers that product to other Communications Providers on an EOI basis, other than where expressly exempted.

4.49 In May 2008⁴² we agreed:

- RFS dates for the WaveStream Connect services and the WaveStream Regional services of 1 January 2009;
- That Openreach will provide EOI inputs to the WaveStream Connect and the WaveStream Regional products from 1 January 2009 configured with customer premises NTE at both ends plus linking fibres;
- Openreach will provide new input products on an EOI basis to CP customers, who will be restricted from using these products to build or extend core networks or where the intent is to replicate a core network. For shorter-distance customer requirements, the Openreach products will connect both customer sites, leaving the CP to provide a retail service wrap; and
- The retail WaveStream Connect and WaveStream Regional names will be retained by BT Global Services, as will the existing customer relationships.

What is the reason for the proposed change?

4.50 WaveStream circuits installed prior to the RFS are based on integrated systems and processes. Migration of these circuits into physically separate systems depends on the development of the relevant business stacks which, as previously described, will not be achieved in time to meet the 30 September 2010 IBMC date. Since the customers of WaveStream Connect and WaveStream Regional are also customers of other services, the customer-based migration means the full stack needs to be in place before migration can occur.

4.51 As a result of the proposed change from product IBMC dates to customer migration dates, WaveStream Connect and WaveStream Regional and the relevant Openreach inputs, OSA and OSEA, would be considered within the Measured Products approach and would consequently be subject to the revised obligation which would provide for 95 per cent of customers consuming one or more of the measured products to be migrated by December 2012.

What is the impact?

4.52 This exemption refers only to those WaveStream installations that were in place prior to RFS. We consider that the competitive impact of this amendment to the exemption would be minimal since new supply is provided on an EOI basis. The exemption allowed for upgrades to existing circuits in terms of additional wavelengths or upgrades of speed as allowed in the contracts at the time of the exemption but new circuits for existing customers would be provided on an EOI basis. Further, if we were not to agree to the exemption, and BT were to withdraw the product, there could be significant disruption to end users.

Question 7 Do you agree that, as a consequence of the revised approach to customer migration to EOI products, Ofcom should agree to this request from BT to

⁴² Document entitled "Requests from BT for exemption from its undertakings under the Enterprise Act 2002 for WaveStream, Redcare Fire and Security and Pathfinder. Part 5". Statement dated 20 May 2008. See

<http://www.ofcom.org.uk/telecoms/btundertakings/exemptionsandvariations/waveredpath.pdf>

remove the IBMC date of 1 October 2010 for Wavestream Connect and Wavestream Regional?

Media and Broadcast

What is it?

- 4.53 Broadcast Access: Media and Broadcast (M&B) provides connectivity for the transmission of broadcast traffic typically over dedicated infrastructure, much of which has been built in response to customer specific demand. These are generally unidirectional high bandwidth services of up to 1.5Gbit/sec and solutions are mostly bespoke to each individual customer.
- 4.54 The Openreach input access services supplied to M&B to support those broadcast services are supplied over analogue and digital feeds and many of these bespoke solutions pre-date Openreach, and do not fit directly into any of the standard products that Openreach provides.

What is the scope of the exemption?

- 4.55 In our consultation dated 18 December 2006⁴³ we stated that BT has requested an exemption for its M&B products in order to allow it time to develop an Openreach digital EOI product.
- 4.56 In July 2007⁴⁴ we agreed to grant the exemption requested by BT whilst an EOI product was developed. This exemption was to enable BT to meet ongoing contractual commitments with existing customers which, among other services, include the distribution of some of the Digital Terrestrial TV multiplexes to facilitate geographic and service expansion associated with the TV Digital Switch-Over date.
- 4.57 The agreement required Openreach to develop and launch a WES (Wholesale Extension Service) broadcasting variant, provided on an EOI basis by 31 December 2007. New M&B contracts entered into after 31 December 2007 use this new WES service as the Openreach input.
- 4.58 Further, the exemption allowed Openreach to maintain the installed customer base on the existing M&B services until the existing contracts end or are terminated (either by the customers or by BT) up to 30 June 2010. This included expansion of the existing services where this was allowed for in the customer contract.
- 4.59 M&B also uses dedicated assets at specific locations exclusively to provide intermittent and occasional access for broadcast to a terrestrial network from locations such as football grounds, conference centres, exhibition venues and other outside broadcast sites. Since there was no current Openreach service which provides for the productised supply of intermittent access services of this sort, the exemption required that for new contracts after 31 December 2007 M&B would use

⁴³ Document entitled "Requests from BT for specified exemptions and agreements to its Undertakings under the Enterprise Act 2002, part 2". Statement published 21 December 2006. See <http://www.ofcom.org.uk/consult/condocs/btrequests/statement/>

⁴⁴ Document entitled "Requests from BT for specified exemptions and agreements to its Undertakings under the Enterprise Act 2002, part 3". Statement published 19 July 2007. See <http://www.ofcom.org.uk/consult/condocs/btrequests/part3/>

the Openreach and BT Wholesale services then available to support its intermittent access services. The exemption required Openreach to continue to support existing contracts on the current basis until those contracts expire or are terminated, up to 30 June 2010.

- 4.60 It should be noted that the RFS date for this product has been met and that all new supply uses an EOI compliant product set. The new EOI product is called "Broadcast Access".

What is the reason for the proposed change?

- 4.61 Due to delays in the OSS system migration, BT cannot now achieve the IBMC date of 30 June 2010 for the installed base of M&B services which use non-EOI compliant products.
- 4.62 As a result of the proposed change from product IBMC dates to customer migration dates, M&B and its Openreach inputs would be considered within the Measured Products approach and would consequently be subject to the revised obligation which would provide for 95 per cent of customers consuming one or more of the measured products to be migrated by December 2012.

What is the impact?

- 4.63 This exemption refers only the remaining M&B installations that were in place prior to RFS. This base is expected to progressively reduce as customers migrate to replacement products with EOI inputs and therefore we consider that the competitive impact of this exemption would likely be minimal. Further, we are of the view that requiring earlier transfer to an EOI product could significantly harm the service to existing customers.

Question 8 Do you agree that, as a consequence of the revised approach to customer migration to EOI products, Ofcom should agree to this request from BT to continue to maintain the installed customer base with contracts entered to prior to 31 December 2007 on the non EOI legacy Media & Broadcast products?

Redcare CCTV

What is it?

- 4.64 Redcare CCTV provides customers with an uncompressed, unidirectional analogue video service running over fibre typically from a remote CCTV camera to a central control room. Its primary use is in public surveillance schemes.

What is the scope of the exemption?

- 4.65 Following the consultation dated 18 December 2006⁴⁵ we granted an exemption in July 2007⁴⁶ for Redcare CCTV products in which an IBMC date of 1 July 2010 was

⁴⁵ Document entitled "Requests from BT for specified exemptions and agreements to its Undertakings under the Enterprise Act 2002, part 2". Statement published 21 December 2006. See <http://www.ofcom.org.uk/consult/condocs/btrequests/statement/>

permitted to provide time to develop and migrate existing customers onto appropriate EOI digital products. The exemption set the RFS date at 1 April 2008.

- 4.66 Since then RFS has been achieved, and the new digital Openreach EOI product has been available from 1 April 2008 (called "CCTV Access").

What is the reason for the proposed change?

- 4.67 Due to delays in the OSS system migration and the corresponding development of 21CN migration products, BT cannot now achieve the IBMC date for the installed base of CCTV services which use non-EOI compliant products.
- 4.68 Therefore, as a result of the proposed change from product IBMC dates to customer migration dates, Redcare CCTV and its Openreach EOI input of CCTV Access would be considered within the Measured Products approach and would consequently be subject to the revised obligation which would provide for 95 per cent of customers consuming one or more of the measured products to be migrated by December 2012.

What is the impact?

- 4.69 This exemption refers only to the Redcare CCTV installations that were in place prior to RFS.
- 4.70 The proportion of non EOI CCTV products is expected to progressively reduce as customers migrate to replacement products supported by EOI inputs. Therefore we consider that the competitive impact of this exemption would be minimal.
- 4.71 Further, if we were not to agree to the exemption, and BT were to withdraw the product, there could be significant disruption to end users.

Question 9 Do you agree that, as a consequence of the revised approach to customer migration to EOI products, Ofcom should agree to this request from BT to remove the IBMC date of 1 July 2010 for Redcare CCTV services?

Implementing these proposals

- 4.72 As described when discussing the individual exemptions, the amendment of these exemptions is required due to the proposed wider variation to the Undertakings discussed in Section 3. The legal text covering the amendments to the exemptions discussed is produced in Annex 7.
- 4.73 If the proposed variation is implemented, the current exemptions referred to will be amended accordingly.

⁴⁶ Document entitled "Requests from BT for specified exemptions and agreements to its Undertakings under the Enterprise Act 2002, part 3". Statement published 19 July 2007. See <http://www.ofcom.org.uk/consult/condocs/btrequests/part3/>

Proposed revisions to other existing exemptions to the Undertakings

4.74 As described above, this section deals with a further two exemptions that require revision as a result of either the delay and revisions in BT's 21CN programme or the changes in approach to systems separation. The two exemptions discussed here are Featurenet SRU cabling and Messaging and Bill Direct.

Featurenet SRU cabling

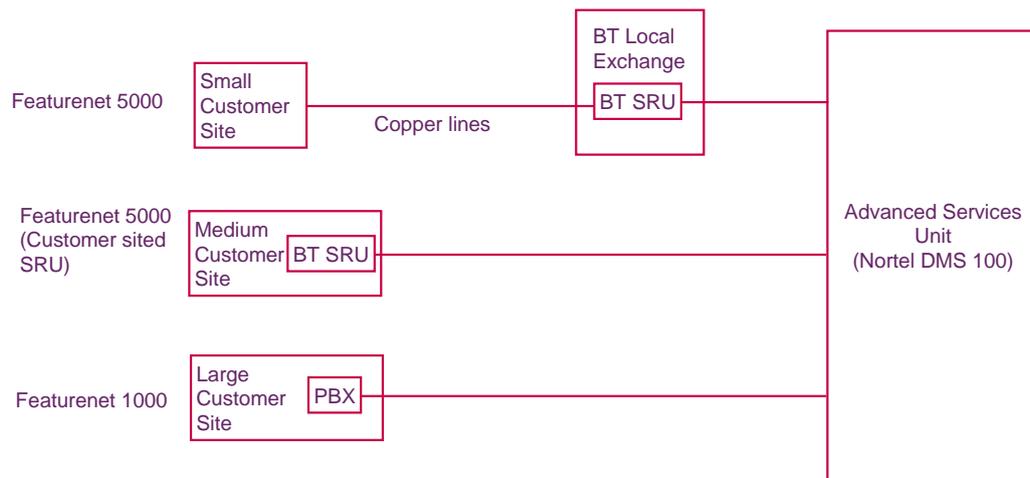
Exemption request

4.75 BT has requested a revision to the exemption granted in June 2008 relating to the way that BT consumes Openreach EOI products for connecting certain Featurenet customers. The exemption relates only to how the physical cabling is implemented for these customer connections.

Service description

- 4.76 Featurenet provides voice PBX-like and Virtual Private Network (VPN) features supported across multiple customer sites hosted on the BT network. A single Featurenet customer may have several thousand lines spread over many sites. Featurenet customers are typically medium to large corporate organisations and government agencies.
- 4.77 Within the BT network, Featurenet is implemented on Advanced Services Units (ASUs) and Small Remote Units (SRUs) installed in various exchanges. Both of these equipments are obsolete and are no longer being manufactured.
- 4.78 Featurenet supports a variety of different connection mechanisms, dependent on the size of the customer site:
- Large customer sites connect to Featurenet through a Private Branch Exchange (PBX) located at the customer premise ("Featurenet 1000").
 - Medium sized customer sites use Small Remote Units (SRUs) located at the customer premises. These SRUs are in turn connected to a remote Advanced Services Units (ASUs) located on BT premises ("Featurenet 5000 with customer sited SRU").
 - The smallest customer sites are cabled directly through the access network to host SRUs located at BT local exchanges. These SRUs are in turn connected to ASUs which may be located elsewhere in the BT network. ("Featurenet 5000").
- 4.79 The range of connection options is illustrated in the diagram below. A single Featurenet customer with multiple sites may use a combination of all three connection mechanisms at different sites.

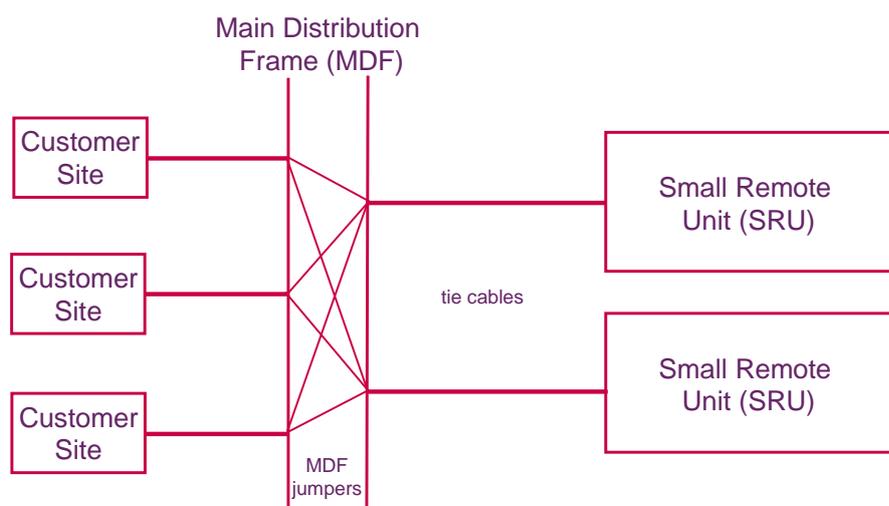
Figure 4.1 Featurenet connection options



Connectivity of small Featurenet sites

- 4.80 As outlined above, small Featurenet customer sites (requiring just a few extensions) are connected via access copper pairs to SRUs sited at BT local exchanges.
- 4.81 Prior to the Undertakings, the provisioning approach adopted by BT at the local exchange was to cable the incoming customer connections from the Main Distribution Frame (MDF) directly to the SRU. The cables used to connect the MDF to the SRU were typically 25 pair tie-cables, and each SRU was cabled to the MDF using up to 11 cables. This provided a total maximum cabled capacity of 275 lines per SRU, of which 240 lines were available for customer use and the remainder were used to support ancillary services, e.g., alarm monitoring lines.
- 4.82 The majority of customer sites have more than one line. Therefore, in order to maximise resilience, the MDF to SRU cabling was undertaken in a way that meant that individual customer sites were shared across multiple SRUs and across shelves on individual SRUs. Thus while an individual 25 pair cable from the MDF will be connected to only one SRU, since that SRU is required to serve multiple customers, each MDF – SRU cable typically contains connections for multiple customers. The jumpering at the MDF provides the necessary flexibility to allow customers to be connected to multiple SRUs.
- 4.83 As a result of this cabling policy, an individual customer will be served by multiple tie cables between the MDF and the SRU as illustrated below.

Figure 4.2 Cabling arrangements between the MDF and the SRU



4.84 BT installed the majority of the SRUs in this manner prior to the implementation of the Undertakings.

EOI Exemption

4.85 In December 2006 BT was granted an exemption for the connection of customers to the Featurenet services where the connection was made at SRUs installed in BT exchange buildings⁴⁷.

4.86 This exemption allowed for the direct connection of customers to the Featurenet service via SRUs at the local exchange without the use of an intermediate Handover Distribution Frame (HDF). This exemption was to allow time for Openreach to develop an EOI product for multiple MPF provision. This product was developed by Openreach by 1 July 2008, as required by the original exemption.

4.87 In June 2008, BT sought a further extension to the exception period for IBMC until 1 July 2010 in order to allow time for the re-cabling necessary to implement the EOI product.

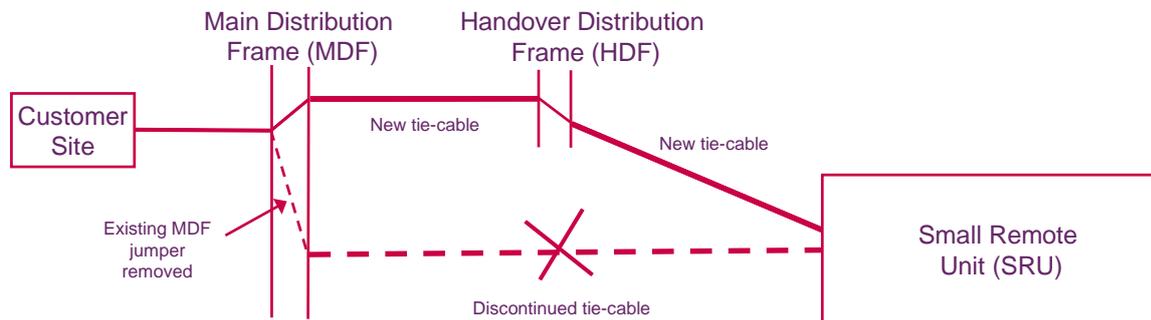
4.88 We granted this further extension on 30 June 2008⁴⁸.

4.89 The EOI multiple MPF product includes termination and presentation to the communications provider at an HDF as shown below. This includes an LLU tie cable to connect to the HDF. The HDF boundary provides a clear demarcation of the service makes management of service delivery easier and means that Openreach maintains control of the MDF. Openreach manages connections across the MDF onto the relevant HDF in order to connect customers to their service provider.

⁴⁷ Document entitled "Requests from BT for specified exemptions and agreements to its Undertakings under the Enterprise Act 2002, part 2". Statement published 21 December 2006. See <http://www.ofcom.org.uk/consult/condocs/btrequests/statement/>

⁴⁸ Explanatory note entitled "Featurenet exemption" dated 30 June 2008. See http://www.ofcom.org.uk/telecoms/btundertakings/exemptionsandvariations/bt3_090708.pdf

Figure 4.3 Cabling arrangements involving an HDF



- 4.90 However, in the case of existing BT customers on pre-installed SRUs connected prior to the EOI product availability, there is no HDF provisioned, i.e., the installed SRUs are cabled directly to the MDF.
- 4.91 For BT to consume the Openreach product on an EOI basis for existing customers, BT would need to re-cable the SRUs to connect via an HDF.
- 4.92 As explained above, the cabling in place supports multiple customers on each tie cable that links the MDF and the SRU. If this cabling were to be replaced in order to insert an HDF, it would be necessary to interrupt the customer's service while the re-cabling took place. Because each individual tie-cable typically serves a number of different Featurenet customers, each interruption would affect a number of different customers. Since the customers of Featurenet are typically business customers, any re-cabling work would need to be undertaken out of normal business hours. This would require simultaneous scheduled service interruptions agreed with each of the relevant customers impacted by each individual tie cable. This approach is considered to be extremely time consuming and would be very disruptive to existing customers since it could require multiple interruptions of service for each individual Featurenet customer.
- 4.93 Given these potential problems with re-cabling, the option was considered of providing new SRUs at each site to allow a simultaneous flash cut from the existing wiring arrangements to a new EOI compliant wiring arrangement, thereby eliminating the need for multiple interruptions in service. However the SRU equipment is no longer manufactured and BT has insufficient stock to allow this option to be pursued. Thus it is not practical to transfer existing customers onto new SRUs.
- 4.94 The IBMC date of 1 July 2010 was set based on BT's intention that the replacement product for existing Featurenet services would be based on a 21CN implementation. However, given BT's recent announcement that it no longer intends a near- to mid-term migration off its legacy voice network, the timing of the availability of a new Featurenet product is currently uncertain, and therefore BT is now unable to meet the IBMC date of 1 July 2010. Therefore, a further exemption is required for the SRU wiring, and is not related to the OSS separation issues discussed above.
- 4.95 Previous responses to our consultation in regard to Featurenet exemptions highlighted concerns that complexity of customer migration and a lack of transparency of costs have hampered the development of a competitive market for Featurenet like services. These issues have been addressed in several ways. Costs

of WLR and LLU infrastructure are published and available, and BT handles costs for EOI and non-EOI delivered services identically. Provision of new Featurenet contracts are EOI except to the extent that the SRU wiring, as described above, is used. The commercial terms BT faces for customers connected using this approach are identical to those that would apply if the Openreach input product was used on an EOI basis. Furthermore, lead times are now the subject of an industry owned process and portability changes have been addressed in particular for multi – line configurations including some specifics for Featurenet.

4.96 Therefore in recognising:

1. that the IBMC date cannot be achieved due to the unavailability of a 21CN replacement product for Featurenet;
 2. that re-cabling of existing customers to insert an HDF EOI product is impractical due to the way that the cabling is currently installed; and
 3. that the SRUs are obsolete, and therefore replacement is not realistic;
- BT has now requested a revision to the exemption for the cabling of Featurenet connections to existing small customers' sites to allow for Featurenet SRUs to be exempted from equivalence until the SRUs are withdrawn from service or replaced.

Ofcom's view

4.97 We have considered the position regarding the continuation of non-EOI compliant cabling of Featurenet customers, i.e., specifically to allow the provision by BT of connection to the Featurenet SRUs without using intermediate HDFs.

4.98 For the avoidance of doubt, it should be noted that in all other respects connection of service onto the Featurenet SRUs are provided on an EOI basis. In particular the charges for both EOI and non EOI services are financially and commercially the same. In addition, Openreach charges BT the EOI price of the bulk MPF product and the processes for migration of customers to or from the non EOI Featurenet provisions are exactly the same processes as are used by the EOI bulk MPF product.

4.99 We are of the view that requiring BT to consume the Openreach provided product on an EOI basis for existing Featurenet customers would require significant re-work that would otherwise be unnecessary and could be potentially very disruptive to the existing customers.

4.100 Further we consider that by using the same systems and processes as the EOI product, and paying the EOI charges, BT does not gain a material commercial or competitive advantage from this exemption. Thus we are minded to grant this extension as requested.

Question 10 Do you agree that Ofcom should agree to an exemption for the cabling of Featurenet connections to existing small customers' sites to allow for Featurenet SRUs to be exempted from equivalence until the SRUs are withdrawn from service or replaced?

Messaging and Bill Direct

Current exemption

- 4.101 On 3 October 2007 we agreed to a request for exemption from BT in relation to Messaging and Bill Direct⁴⁹. BT Wholesale supplies certain messaging products (such as BT Answer, BT Call Minder and Fixed Line Text) to CPs, including BT Retail. Bill Direct is a product that BT Wholesale supplies to BT Retail.
- 4.102 The exemption allowed access to Openreach systems for the implementation of these products. The majority of orders for these products flow automatically into the Openreach systems (CSS) and as such no exemption was required. However, for the remaining 5 per cent, manual intervention is required by BT Operate on behalf of BT Wholesale.
- 4.103 The exemption allowed for this access until 30 June 2010, by allowing a dedicated team of BT Wholesale/BT Operate staff access to a user profile on the Openreach systems to allow the messaging and Bill Direct products to be provided. The access profile would not allow access to other activities on CSS. Further, use of the profile would be monitored by the EAO (since it would show as an exception on the user access controls reports) and would be subject to Director level oversight on a quarterly basis.
- 4.104 It was noted that as BT moved towards full systems separation in June 2010, a diminishing number of orders would require such manual intervention.
- 4.105 We agreed to the exemption because:
- there would likely be customer detriment to not granting the exemption, since certain orders for messaging products would not be able to be fulfilled;
 - there is not likely to be competitive advantage to BT, since the messaging products in particular are primarily provided to CPs other than BT Retail; and
 - of the small and diminishing number of orders, out of the total number of orders, that would require manual intervention.

Requirement for further exemption

- 4.106 The requirement for the exemption is linked to the degree to which the underlying products (such as WLR and Featureline) to which messaging and Bill Direct can be applied, continue to be supported in the Openreach systems prior to systems separation. As explained previously, this systems separation will not be completed by 30 June 2010.
- 4.107 The need to be able to provide Messaging and Bill Direct services on lines that have not been separated remains unchanged from the original exemption. However, since full systems separation will not be accomplished by 30 June 2010, expiry of the exemption on that date would mean future orders for these services may not be able to be fulfilled. BT has therefore requested a further exemption to allow for Messaging and Bill Direct to continue to be supported. User access controls and additional

⁴⁹ See <http://www.ofcom.org.uk/telecoms/btundertakings/exemptionsandvariations/part4/>

senior level reviews will continue to be applied. Given the successful application of the controls to date and the diminishing volumes BT is requesting that the Director level additional reviews be 6-monthly rather than quarterly.

Ofcom's view

4.108 We consider that this request is a consequence of the wider proposals outlined in Section 3 of this consultation. Whilst Messaging and Bill Direct are not, in themselves, Measured Products, they are features that can be applied to the Measured Products. The change of Director level review of the operation of user access controls from a quarterly to a six monthly basis is reasonable now that BT's operation of user access controls across the organisation has become more embedded and is working effectively. We consider that the arguments presented in granting the previous exemption continue to be relevant. In addition, whilst the end date of the exemption is extended in line with the obligations set out in Section 3, the volume of orders requiring manual intervention continue to decrease in line with the targets for Measured Product migration.

4.109 We are therefore minded to agree to the request because:

- there continues to be the possibility of customer detriment if we do not agree to the exemption, since certain orders for messaging products would not be able to be fulfilled;
- there is not likely to be competitive advantage to BT, since the messaging products in particular are primarily provided to CPs other than BT Retail; and
- the migration requirements for Measured Products set in place by the proposed variation would mean that an increasing number of lines to which these products may be applied would move to separated systems so that the number of orders requiring manual intervention would continue to reduce.

Question 11 Do you agree that Ofcom should agree to this request from BT for an exemption to allow the Messaging & Bill Direct support team to continue to access data from Openreach's OSS until such time as Openreach's OSS physical systems separation is completed? Please also state whether you agree for Director level review of the operation of end user access controls to be revised from a quarterly basis to a six-monthly basis.

Section 5

Assessing the impact of our proposals

Introduction

- 5.1 In this section, we assess the impact of the proposed changes on consumers and competition. We also assess the overall impact of these changes on the Undertakings as a comprehensive solution to the competition issues identified in the TSR. This assessment provides the rationale for why we are proposing these amendments to the Undertakings.
- 5.2 To explain the context within which these changes should be considered, we first discuss the progress BT has made in implementing the Undertakings, as well as changes in the market that have occurred in that time.

The context: progress in implementing the Undertakings

- 5.3 As context for deciding how to approach the challenges raised, it is important to understand the progress to date in implementing the Undertakings. We have set out our latest review of progress in more detail in our latest TSR Implementation Review, which we have also published today⁵⁰. The chief findings of that review are set out below.
- 5.4 Since the Undertakings were agreed nearly four years ago, BT has dedicated significant effort to implementing the necessary changes to support Equality of Access. Whilst other factors have also played a contributory role, we consider that the Undertakings have delivered strong benefits to end users and competition. Consumers have benefited through greater availability and choice of services, including broadband, bundled voice and broadband, triple-play services and business connectivity services based on Ethernet.
- 5.5 The UK competitive landscape has changed significantly. There are now nearly six million broadband lines based on LLU. LLU operators have extended their footprint extensively to reach some 2,000 local exchanges. BT's retail share of broadband is now one of the lowest incumbent operator market shares in the OECD.
- 5.6 As reported by the EAB, BT has delivered over 80 per cent of its Undertakings obligations. Openreach's engagement with customers has improved as have the levels of service performance associated with its key product sets.
- 5.7 Against this backdrop of achievement, aspects of BT's implementation of the Undertakings have proved more challenging, such as for example, Openreach's approach to product development and BT's implementation of systems separation, which this consultation is addressing. Issues are also raised by BT's recently announced change in strategy in relation to the deployment of 21CN voice services. We are considering this issue as part of our continued strategic work on the implications of NGNs for competition.

⁵⁰ *Impact of the Strategic Review of Telecoms*, at <http://www.ofcom.org.uk/telecoms/btundertakings/>

5.8 These challenges aside, we consider that the principle and purpose set out in the TSR continues to be valid and that the Undertakings continue to provide a comprehensive solution to the competition concerns that we identified in the TSR.

5.9 In reaching this conclusion we have drawn on the information presented by the Office of the Telecoms Adjudicator (OTA) and reports published by the Equality of Access Board as well as stakeholder engagement.

Impact on competition

Key changes to assess

5.10 In assessing the impacts on competition, the main changes to the Undertakings proposed in this document are that:

- 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).

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

The impact of the proposed changes in Level 2 separation

5.12 As a result of the proposed changes, about half of the separation of business customer records is expected to happen after December 2012 with further firm separation and EOI percentage milestones for June 2014 to be advised by BT no later than the end of 2011. There is also a risk associated with business separation in that its pace beyond 2012 is not yet confirmed. To the extent that there is an overall competitive impact from our proposals, we would therefore expect it to be limited to business markets.

5.13 We do not consider that residential markets would be affected because virtually all residential customers will be separated to Level 2 by June 2010. There should therefore be almost no impact in terms of the risk of inappropriate information sharing or the number of residential customers that might not be migrated to using EOI products⁵¹.

⁵¹ 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

- 5.14 The potential impact of these proposed delays in separation needs to be judged in relation to the benefits that we see as following from each level of separation. Slower Level 2 separation of business customers raises the risk of inappropriate access to information between Openreach and RoBT, and maintains a reliance on Level 1 controls for a longer period.
- 5.15 However, we consider that there are various factors that limit the actual significance of these proposed delays in Level 2 separation. The first factor is that we consider that there is limited scope for non-price discrimination in favour of RoBT, in terms of either processes or scope for information-sharing.
- 5.16 Regarding the processes that Openreach uses to supply products to its customers, the scope for non-price discrimination to occur appears to be very limited. For all products, supply to new customers is provided on an EOI basis. There are also very limited differences in the experiences of the installed base. For example, for ISDN2, Openreach migrated its order-processing in April 2009 to use the WLR3 gateway, which means that there is virtually no difference in functionality between the processes used by BT and other CPs. Prior to that, there could be advantages for BT's installed customer base, using the Classic system, in terms of the speed of provisioning customers. So even though the slower pace of separation means that BT's legacy processes would be used for longer, this should have a very limited impact.
- 5.17 To limit the risk of inappropriate information-sharing, user access controls (Level 1 separation) between Openreach and BT downstream businesses will be used wherever Level 2 separation does not yet exist for products provided on an EOI basis out of Openreach. Continuing EAB audits are proposed where Level 1 controls only apply. Only where products are not required to be delivered on an EOI basis – typically legacy products only purchased by BT, or value-added products which are replicable by other CPs, will BT not apply user access controls. In such cases there seems to be no discernible competitive impact, as Openreach would likely not be supplying such products to other CPs.
- 5.18 Another factor that limits the competitive impact of the proposed changes is that the degree of competition on the products for which Level 2 separation would be more delayed is affected by factors other than systems separation and/or the use by BT's legacy customer base of the relevant EOI products. For example, for ISDN2, weaknesses in competition are not the result of a lack of EOI. Rather, there are other constraints on competition. BT still has a retail market share of around 75% in the ISDN2 market. Ofcom considers that the extent of competitor entry is limited largely due to there being long-term contracts and the fact that the market is declining⁵². At the wholesale level, BT has a market share above 99%. Where CPs have deployed LLU capable of supporting narrowband services, this has been to support analogue exchange lines rather than ISDN⁵³.
- 5.19 Also, there are limits to how far those regulated products whose Level 2 separation would be delayed contribute to competition for business customers. BT data for

⁵² This analysis relates to the UK excluding the Hull area, and is drawn from Section 5 of our latest consultation on competition in fixed narrowband services retail markets. See http://www.ofcom.org.uk/consult/condocs/retail_markets/fnrsm.pdf.

⁵³ This analysis relates to the UK excluding the Hull area, and is drawn from Section 5 of our latest consultation on competition in fixed narrowband services wholesale markets. See http://www.ofcom.org.uk/consult/condocs/review_wholesale/fnwm.pdf

2008-9 suggest that for BT Global Services, only 12.7 per cent of total UK revenue derives from the main downstream products relevant to this delay in separation⁵⁴. For BT Business, the corresponding figure is higher, at 30.5 per cent of total UK revenue, but such businesses are likely to involve easier migration to the business stack due to having a less complex product portfolio.

5.20 On Level 2 separation beyond 2012, we acknowledge that the lack of a definitive target within the Undertakings at the present time represents a risk to the speed of progress. However, we consider that it is difficult to frame the obligation differently at this stage before BT's business stack is built and tested to some extent by real migrations. We have sought to promote earlier transparency of this further migration by requiring BT to notify us of the achievable 2014 milestone within six months of its business stack being built (and in any event no later than the end of 2011). We also intend that this provision would promote early planning by BT of how to deliver a substantial level of further migrations by 2014. Some additional confidence can be provided on this later migration due to:

- The fact that the business stack builds on some capabilities that have already been developed. Over 20 per cent of the work needed to deliver the business stack is already complete, according to BT; and
- The past evidence of BT catching up with a late start to migration, when looking at BT's experience to date with the WLR3 migration programme. This suggests that BT may well be able to migrate many business customers quickly once the business stack is built. We will be asking the EAB to monitor closely BT's work on the business stack and its preparations for migration, to promote significant progress.

5.21 A final point about the impact of Level 2 separation delays on competition is that this effect needs to be considered in conjunction with the potential negative impact on business customers were they to be migrated too quickly. There is a risk of poor customer service if there is insufficient systems development to cope with migrating all the more complex range of products used by larger business customers. This factor argues in favour of the proposed 'Measured Products' approach in the variation, despite the delays in Level 2 separation for those specific products. As noted in Section 4, we do not in any case consider that there are other notable competitive impacts unique to the individual products that we propose to add to the list of Measured Products. The avoidance of customer disruption is also a factor that supports our proposal to take no further action to remedy BT's recent breach on its ISDN2 milestone.

The impact of the proposed changes in Level 3 separation

5.22 Under the proposed variation, BT will remain committed to delivering full physical (Level 3) separation. However, there would not be a definitive date in the near to medium term by which physical separation has to be substantially completed.

5.23 Level 3 separation does have some direct competitive benefits, which would under our proposals accrue over a longer period. Level 3 separation avoids further risks of RoBT getting preferential service relative to other CPs. It also means that decisions on Openreach's computing systems are more independent from BT, such that they

⁵⁴ PSTN, ISDN2, ISDN30, Featurenet, Featureline

cannot, for example, run competitive tenders that would reduce their costs and, in turn, their charges to their customers. Level 3 separation also increases the tendency of BT businesses to behave in a more operationally separate way. A slower pace of Level 3 separation could therefore also reduce the indirect, if likely more substantial, competitive benefits.

- 5.24 However, we are satisfied that the impact of the proposed slower pace of Level 3 separation is not very significant. This is partly because as BT implements Level 2 separation, it migrates the applications and data to physically separate servers and database management systems. The data itself will continue to reside on 'virtualised' data storage. This data virtualisation is implemented by industry standard software which has been verified to provide a high degree of separation, and is widely used by large IT infrastructure providers who securely host the data of multiple organisations on such separate virtualised data stores. This common approach, which allows economies with shared data, effectively takes the level of separation a long way towards Level 3. Also, ongoing scrutiny by the EAB and roadmap reviews between BT and Ofcom will enable us to keep an eye on progress towards Level 3 separation and to see that opportunities are being taken, where available, to physically separate Openreach's systems from the RoBT.
- 5.25 We also note that there are potential mitigating benefits to delayed Level 3 separation. Flexibility in the timing of this separation allows more ongoing scope to react to the changing priorities of Openreach's customers for future product and service developments. Also, proactive separation of applications and data to physically separate hardware can involve considerable cost and disruption to customer service. A more carefully managed approach may therefore be of broader benefit.

The impact of Openreach's additional commitments

- 5.26 Importantly, the needs of CPs serving business consumers have been recognised clearly in the outcomes of the prioritisation exercise with Openreach. We propose to reflect these outcomes within the variation. The Openreach proposed developments cover both developments that support competition in the short-term, and ones that would make it faster in general to consume Openreach's products as a basis for competition. The delivery of specific developments for businesses would help to counterbalance the fact that the proposed delay to systems separation would affect a proportion of business customers.
- 5.27 Ultimately, directing resources towards allowing Openreach to meet more CP demands would provide more support for competition in the next few years, which should bring forward benefits to both residential and business consumers. Especially in the current economic environment, we consider that such a resource re-direction is in the best interests of Openreach's customers. As well as more short-term product and service improvements from Openreach, developments to improve its service delivery in general should provide long-term benefits to industry. For example, addressing the issues on the consumption model (see paragraphs 3.77-3.79) should enable faster innovation and responsiveness to CPs' customers. These Openreach service delivery improvements are arising both from the additional developments covered by the regulatory obligation and Openreach's own moves to improve its product development processes and customer interaction.
- 5.28 A further consideration when assessing the impact on industry of these changes is the widespread support that this re-prioritisation exercise has received from Openreach's customers, as reported to us by the OTA. This support has been given

by a wide range of CPs in the OTA-facilitated discussions, both in a general sense in terms of the value of re-prioritising resources, and more specifically in terms of the good level of consensus achieved concerning the delivery of specific Openreach developments.

Impact on consumers

The impact of the proposed changes in Level 2 separation

- 5.29 The impact on consumers as a result of the proposed changes is primarily focused on business customers, as it is their customer records for which Level 2 separation would be delayed. For residential customers, we do not consider that there is a material direct negative impact of this delay, because Level 2 separation will be virtually completed by June 2010.
- 5.30 For business customers, the impact of changes in Level 2 separation includes the effects both in terms of competitive outcomes and in terms of customer experience. We discuss above the general impacts on competition, and also the impacts on particular products consumed by business customers. In summary we consider that there are a number of factors that limit the competitive impact of this delay.
- 5.31 When considering competitive outcomes for businesses, the impact of the delay in Level 2 separation should also take into account the re-prioritisation of resources that would allow BT's competitors to get additional developments from Openreach. Those developments can be used to support competition and innovation that benefit consumers. These developments affect all consumers to a degree, partly because many of them involve general improvements in how Openreach transacts with communications providers. For example, the proposed improvements to the consumption model are intended to enable communications providers to deliver products to their customers more quickly after they are released by Openreach.
- 5.32 However, in addition to those general improvements, a number of the Openreach extra developments should be of more specific benefit to customers. For business customers, notable examples include 'x-hour repair' - quick repair to service within defined timescales – and developments of high bandwidth ethernet services for large customers such as government bodies. For residential customers, the benefits of the 'MPF Location Data' enhancement should make it quicker to locate the source of a call to the emergency services. More examples of these developments are provided in Section 3 and (for Openreach's customers) on Openreach's website⁵⁵.
- 5.33 As well as the impact on competitive outcomes, we also consider that business customers would benefit to a degree from the delays in Level 2 separation. This is because the timing of migration after the business stack is built relates to BT's approach of migrating a customer only once all of the products that it uses can be migrated to a separate system. This approach avoids customer disruption such as multiple billing accounts for different products. The products for which this disruption would be avoided are those for which the progress towards separation would now be assessed as part of the Measured Products approach described in Section 3.
- 5.34 Previous poor experience when migrating WLR customers with different service features supports the case for taking the per-customer approach now. This factor

⁵⁵ See <http://www.openreach.co.uk/orpg/customerzone/roadmap/commitments.do>

should be given some weight, especially because business customers are much more complex than residential WLR customers in terms of the number of products that they purchase and the potential for a negative experience if there were a hard push to come closer to the original Level 2 separation milestones. A poorly managed migration process could have a detrimental impact on business customers' day-to-day operations.

The impact of the proposed changes in Level 3 separation

- 5.35 The impact on consumers of the proposed changes in Level 3 is relevant to residential as well as business customers. However, that impact really only derives from the extent to which delays in Level 3 separation affect competition, which we discuss above.
- 5.36 It is important to note that we consider the additional benefits of Level 2 over Level 1 separation to be greater than the further benefits that Level 3 separation delivers relative to Level 2 separation. As stated in paragraph 3.13, we do consider Level 3 separation to be the best long-term solution as it does offer some additional benefits to Level 2. However, Level 2 separation does give much stronger assurance than Level 1 separation that BT's businesses will operate independently, and it reduces the risk of inappropriate access to information, as well as being much easier to monitor and audit.
- 5.37 Therefore we do not consider that consumers are significantly impacted by the proposed changes in Level 3 separation. Also, the proposed flexibility on the timing of Level 3 separation should give more scope in future for Openreach to deliver further developments to its customers that would then be of benefit to consumers.

Impact on the effectiveness of the Undertakings

- 5.38 In assessing the impact on the Undertakings, we need to consider whether our proposed changes, and their impacts on competition and consumers, alter the effectiveness of the Undertakings as a comprehensive solution to the competition problems identified in the TSR. The impacts of our proposals on competition and consumers have been considered above. Below we assess the impact of our proposals on the overall delivery of the Undertakings and their consequent effectiveness as a comprehensive solution.

The impact of the proposed changes in Level 2 separation

- 5.39 We are satisfied that the proposed changes still maintain sufficient momentum towards separation for all customers, including businesses. Level 2 separation for residential customers should, indeed, be virtually complete by June 2010. BT should also have a commercial incentive to continue migrating business customers to the separate business stack once its migration programme reaches scale, because it would be inefficient for BT to run multiple systems stacks. By the end of 2012, BT should have already migrated about half of business customers⁵⁶. Therefore, even though we do not yet know the achievable path of Level 2 separation thereafter (which would be subject to notification to us no later than the end of 2011), BT should

⁵⁶ Residential customer service records are about 80% of the total, and business customer service records make up the rest. Virtually all of the residential element will be separated to Level 2 by June 2010. The increase in total Level 2 separation to 90% of customer service records will therefore represent half of business customer service records.

still have an incentive to continue on that path. In addition, the intended active detailed monitoring (beyond the formal Undertakings milestones) of BT's progress in building the business stack and migrating business customers should give extra impetus to maintain the scheduled progress to Level 2 migration.

The impact of the proposed changes in Level 3 separation

- 5.40 The first point to make is that BT's approach to Level 2 separation will include many aspects of Level 3 separation; specifically, moving applications and database management systems to physically separate servers. The use of virtualised data stores to hold the data itself, whilst not being full physical separation, is based on industry standard approaches that allow large IT service organisations to securely and separately host the data of multiple organisations.
- 5.41 Building the separate business stack also provides BT with the right incentives to carry on the path to Level 3 physical separation, even if the timing of that move would be driven by pragmatic considerations rather than specific milestones.
- 5.42 BT also has other incentives for physical separation. For example, there is a commercial incentive to reduce the number of data centres significantly, and when this happens there will be opportunities to increase Level 3 separation between Openreach and RoBT.
- 5.43 Whilst there may be fewer incentives to fully separate applications for Common Services, as explained in Section 3 we consider that such applications are not strictly operational support systems. We have, moreover, investigated these applications to consider whether the Level 1 controls on them would be sufficient until separate solutions exist, and we are satisfied that this is the case.
- 5.44 It is also important that there will also be ongoing scrutiny of BT's decisions on Level 3 separation – both external through roadmap reviews and internal through consideration of separation within BT's Design Council's investment decisions.
- 5.45 More broadly, we consider that partial progress towards Level 3 separation is mitigated to a degree because much behavioural and operational change has already happened within BT. There have been some important changes which indicate that the separation programme has had the desired effect of establishing Openreach as an operationally separate organisation:
- BT has in place a formal Systems Separation programme which manages and co-ordinates separation activities across the company. This programme is regularly reviewed at the most senior levels of management in BT;
 - Openreach has moved from two separate businesses - a low volume business serving other CPs and a high volume business serving BT in the old integrated way - to a single high volume business serving BT and CPs in the same way;
 - Openreach is experiencing high levels of transaction volumes as BT moves towards full Equality of Access;
 - the volume of Openreach services to other CPs has been ahead of forecasts;
 - unforeseen enhancements to the EOI products have emerged as migration to Equality of Access has been implemented;

- Openreach is now operating much more independently from BT, and CPs are much more engaged in the process of future requirements for EOI products. Openreach is currently implementing a new product development process that should give more involvement and visibility to its customers. This improved engagement with CPs has, indeed, benefited from the experience of defining the additional Openreach developments as part of the proposals in this document;
- Openreach's growing responsiveness to its customers is also indicated by its decisions to extend the lifetime of the WLR2 interface by a year until June 2011, to allow customers a longer period to migrate to WLR3; and
- The implementation of user access controls (Level 1 separation) and the monitoring of their implementation through EAB audit has shown that this can provide an acceptable level of separation in the short to medium term while the longer-term full physical separation work is completed.

5.46 Finally, it is important to note that these changes have only limited potential to change the overall effectiveness of the Undertakings. This is because the bulk of the specific targets in the Undertakings have already been met. Also, important market outcomes, have been achieved; Paragraphs 5.4-5.6 refer to some notable examples of progress. Therefore we do not consider that the proposed changes to the approach towards delivery of full physical separation are sufficient to override the overall progress made so far through the Undertakings.

Overall conclusions on the proposed changes

5.47 We conclude that there is 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 will be close scrutiny of BT's progress towards physical separation through regular roadmap reviews.

5.48 The impact on competition also needs to take into account the potential benefits from the proposed changes. 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, giving more flexibility on the pace of Level 3 separation should 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.

5.49 In terms of the impact on consumers, we consider that the proposed approach is 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.

5.50 We consider that the Undertakings would remain a comprehensive solution to the problems identified in the TSR following these proposed changes. Partly this is because of the limited consumer and competition impacts identified above. Also, we consider that there is still sufficient momentum preserved, with ongoing scrutiny,

towards separation at both Level 2 and Level 3. We also consider that the significant achievements already delivered with the help of the Undertakings mean that the proposed changes do not make a significant difference to the extent to which the Undertakings constitute a comprehensive solution to the competition problems identified in the TSR. We consider that our proposals maintain the significant and continuing progress towards delivering separation and EOI, such that Equality of Access will continue to be safeguarded.

Question 12 Taking into account all of the analysis and considerations in this document, do you agree that we should grant the variation to the Undertakings as set out in Annex 5?

Annex 1

Responding to this consultation

How to respond

- A1.1 Ofcom invites written views and comments on the issues raised in this document, to be made **by 5pm on 10 July 2009**.
- A1.2 Ofcom strongly prefers to receive responses using the online web form at <http://www.ofcom.org.uk/consult/condocs/btundertakings/howtorespond/form>, as this helps us to process the responses quickly and efficiently. We would also be grateful if you could assist us by completing a response cover sheet (see Annex 3), to indicate whether or not there are confidentiality issues. This response coversheet is incorporated into the online web form questionnaire.
- A1.3 For larger consultation responses - particularly those with supporting charts, tables or other data - please email nic.green@ofcom.org.uk attaching your response in Microsoft Word format, together with a consultation response coversheet.
- A1.4 Responses may alternatively be posted or faxed to the address below, marked with the title of the consultation.
- Nic Green
4th Floor
Competition Group
Riverside House
2A Southwark Bridge Road
London SE1 9HA
- Fax: 020 7783 4109
- A1.5 Note that we do not need a hard copy in addition to an electronic version. Ofcom will acknowledge receipt of responses if they are submitted using the online web form but not otherwise.
- A1.6 It would be helpful if your response could include direct answers to the questions asked in this document, which are listed together at Annex 4. It would also help if you can explain why you hold your views and how Ofcom's proposals would impact on you.

Further information

- A1.7 If you want to discuss the issues and questions raised in this consultation, or need advice on the appropriate form of response, please contact Nic Green on 020 7783 4154.

Confidentiality

- A1.8 We believe it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all responses on our website, www.ofcom.org.uk, ideally on receipt. If you think your response should be kept confidential, can you please specify what part or whether

all of your response should be kept confidential, and specify why. Please also place such parts in a separate annex.

- A1.9 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and will try to respect this. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.
- A1.10 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's approach on intellectual property rights is explained further on its website at <http://www.ofcom.org.uk/about/accoun/disclaimer/>

Next steps

- A1.11 Following the end of the consultation period, Ofcom intends to publish a statement in late summer 2009.
- A1.12 Please note that you can register to receive free mail Updates alerting you to the publications of relevant Ofcom documents. For more details please see: http://www.ofcom.org.uk/static/subscribe/select_list.htm

Ofcom's consultation processes

- A1.13 Ofcom seeks to ensure that responding to a consultation is easy as possible. For more information please see our consultation principles in Annex 2.
- A1.14 If you have any comments or suggestions on how Ofcom conducts its consultations, please call our consultation helpdesk on 020 7981 3003 or e-mail us at consult@ofcom.org.uk . We would particularly welcome thoughts on how Ofcom could more effectively seek the views of those groups or individuals, such as small businesses or particular types of residential consumers, who are less likely to give their opinions through a formal consultation.
- A1.15 If you would like to discuss these issues or Ofcom's consultation processes more generally you can alternatively contact Vicki Nash, Director Scotland, who is Ofcom's consultation champion:

Vicki Nash
Ofcom
Sutherland House
149 St. Vincent Street
Glasgow G2 5NW

Tel: 0141 229 7401
Fax: 0141 229 7433

Email vicki.nash@ofcom.org.uk

Annex 2

Ofcom's consultation principles

A2.1 Ofcom has published the following seven principles that it will follow for each public written consultation:

Before the consultation

A2.2 Where possible, we will hold informal talks with people and organisations before announcing a big consultation to find out whether we are thinking in the right direction. If we do not have enough time to do this, we will hold an open meeting to explain our proposals shortly after announcing the consultation.

During the consultation

A2.3 We will be clear about who we are consulting, why, on what questions and for how long.

A2.4 We will make the consultation document as short and simple as possible with a summary of no more than two pages. We will try to make it as easy as possible to give us a written response. If the consultation is complicated, we may provide a shortened Plain English Guide for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.

A2.5 We will consult for up to 10 weeks depending on the potential impact of our proposals.

A2.6 A person within Ofcom will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organisations interested in the outcome of our decisions. Ofcom's 'Consultation Champion' will also be the main person to contact with views on the way we run our consultations.

A2.7 If we are not able to follow one of these principles, we will explain why.

After the consultation

A2.8 We think it is important for everyone interested in an issue to see the views of others during a consultation. We would usually publish all the responses we have received on our website. In our statement, we will give reasons for our decisions and will give an account of how the views of those concerned helped shape those decisions.

Annex 3

Consultation response cover sheet

- A3.1 In the interests of transparency and good regulatory practice, we will publish all consultation responses in full on our website, www.ofcom.org.uk.
- A3.2 We have produced a coversheet for responses (see below) and would be very grateful if you could send one with your response (this is incorporated into the online web form if you respond in this way). This will speed up our processing of responses, and help to maintain confidentiality where appropriate.
- A3.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore Ofcom would encourage respondents to complete their coversheet in a way that allows Ofcom to publish their responses upon receipt, rather than waiting until the consultation period has ended.
- A3.4 We strongly prefer to receive responses via the online web form which incorporates the coversheet. If you are responding via email, post or fax you can download an electronic copy of this coversheet in Word or RTF format from the 'Consultations' section of our website at www.ofcom.org.uk/consult/.
- A3.5 Please put any parts of your response you consider should be kept confidential in a separate annex to your response and include your reasons why this part of your response should not be published. This can include information such as your personal background and experience. If you want your name, address, other contact details, or job title to remain confidential, please provide them in your cover sheet only, so that we don't have to edit your response.

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title: **Re-prioritising BT's remaining Undertakings commitments on information systems separation**

To (Ofcom contact): **Nic Green, Competition Group**

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

CONFIDENTIALITY

Please tick below what part of your response you consider is confidential, giving your reasons why

Nothing	<input type="checkbox"/>	Name/contact details/job title	<input type="checkbox"/>
Whole response	<input type="checkbox"/>	Organisation	<input type="checkbox"/>
Part of the response	<input type="checkbox"/>		

If there is no separate annex, which parts?

If you want part of your response, your name or your organisation not to be published, can Ofcom still publish a reference to the contents of your response (including, for any confidential parts, a general summary that does not disclose the specific information or enable you to be identified)?

DECLARATION

I confirm that the correspondence supplied with this cover sheet is a formal consultation response that Ofcom can publish. However, in supplying this response, I understand that Ofcom may need to publish all responses, including those which are marked as confidential, in order to meet legal obligations. If I have sent my response by email, Ofcom can disregard any standard e-mail text about not disclosing email contents and attachments.

Ofcom seeks to publish responses on receipt. If your response is non-confidential (in whole or in part), and you would prefer us to publish your response only once the consultation has ended, please tick here.

Name

Signed (if hard copy)

Annex 4

Consultation questions

Question 1 Do you agree with our proposed changes to BT's systems separation obligations? If not, why not?

Question 2 Do you agree with our proposed change of approach to measuring BT's progress on product EOI? If not, why not?

Question 3 Do you agree that the package of additional Openreach developments and the new Undertakings commitments that relate to them are appropriate? If not, why not?

Question 4 Do you agree that, as a consequence of the revised approach to customer migration to EOI products, Ofcom should agree to this request from BT to remove the IBMC date of 1 July 2010 for Featureline?

Question 5 Do you agree that, as a consequence of the revised approach to customer migration to EOI products, Ofcom should agree to this request from BT to remove the IBMC date of 1 July 2010 for Featurenet?

Question 6 Do you agree that, as a consequence of the revised approach to customer migration to EOI products, Ofcom should agree to this request from BT to remove the IBMC date of 1 July 2010 for Megastream Ethernet using ASDH2 technology?

Question 7 Do you agree that, as a consequence of the revised approach to customer migration to EOI products, Ofcom should agree to this request from BT to remove the IBMC date of 1 October 2010 for Wavestream Connect and Wavestream Regional?

Question 8 Do you agree that, as a consequence of the revised approach to customer migration to EOI products, Ofcom should agree to this request from BT to continue to maintain the installed customer base with contracts entered to prior to 31 December 2007 on the non EOI legacy Media & Broadcast products?

Question 9 Do you agree that, as a consequence of the revised approach to customer migration to EOI products, Ofcom should agree to this request from BT to remove the IBMC date of 1 July 2010 for Redcare CCTV services?

Question 10 Do you agree that Ofcom should agree to an exemption for the cabling of Featurenet connections to existing small customers' sites to allow for Featurenet SRUs to be exempted from equivalence until the SRUs are withdrawn from service or replaced?

Question 11 Do you agree that Ofcom should agree to this request from BT for an exemption to allow the Messaging & Bill Direct support team to continue to access data from Openreach's OSS until such time as Openreach's OSS physical systems separation is completed? Please also state whether you agree for Director level review of the operation of end user access controls to be revised from a quarterly basis to a six-monthly basis.

Question 12 Taking into account all of the analysis and considerations in this document, do you agree that we should grant the variation to the Undertakings as set out in Annex 5?

Annex 5

Proposed Variation Document

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

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 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
 - i. 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 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 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:
- (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 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 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:

Annex 6

BT requests for exemptions to the Undertakings

BT REQUEST FOR EXEMPTION FROM EQUIVALENCE UNDER SECTION 5.46.1 IN RELATION TO FEATURENET

Legal basis: Section 5.46.1 c)

1. Product description and reasons for request

This request concerns the technical processes through which Openreach's inputs into other parts of BT to support the Featurenet product portfolio are delivered and maintained.

On 21 December 2006, Ofcom published a statement entitled *Requests from BT for specified exemptions and agreements to its Undertakings under the Enterprise Act 2002 – Part 2* ("Ofcom Statement of 21 December 2006"). That statement included agreement to 9 requests from BT: this included Request No. 4 in relation to Featurenet.

On 30 June 2008 a revised request in relation to Featurenet was agreed which replaced the December 2006 agreement. That agreement encompassed three main items: the RFS date, the IBMC date, and technical issues with regard to how the EOI inputs would be consumed in conjunction with downstream legacy hardware.

The RFS date has been achieved and validated as such by the EAB, the IBMC requirement is being consulted upon in context of overall Undertakings Systems requirements, but there remains a need for a separate request with regard to the technical issues. This document forms that request and upon agreement will replace the exemption agreement for Featurenet of 30 June 2008.

RFS achievement required an Openreach development of a new product enhancement of the existing LLU Metallic Path Facility offering, which was launched by Openreach under the name "LLU MPF Multiple Ordering" (also known as "Bulk MPF").

Pre-launch assessment of the future deployment of the new Multiple MPF EOI Openreach product to support Featurenet services identified specific challenges which related primarily to the handover and tie cable requirements as they would apply to existing Featurenet hardware installations, rather than to the new EOI Multiple MPF product itself. These challenges have strong parallels with those considered in the separate agreed exemption in relation to the way in which BT's IPStream is connected to the Main Distribution Frame ("MDF") (see Ofcom Statement of 21 December 2006, *Requests from BT for specified exemptions and agreements to its Undertakings under the Enterprise Act 2002 – Part 2*, Request No. 4 in relation to LLU Associated Services in relation to BT's 20CN DSLAMs - "LLU Associated Services exemption").

Specifically:

- For both Featurenet and IPStream, the BT electronics equipment (in the case of Featurenet, Small Remote Units or “SRUs”, and in the case of IPStream, DSLAMs), is directly hardwired and connected to the MDF.
- For both IPStream and Featurenet, the BT product must, in conjunction with the LLU product, consume LLU Associated Services and specifically Handover Distribution Frames (“HDF”) and LLU Internal Tie Cables.
- For both Featurenet and IPStream, multiple end users are supported on any one piece of BT electronics equipment (SRUs and DSLAMs, respectively), and any disconnection of the electronics equipment therefore causes disruption and service downtime for multiple end users.

In the case of IPStream, Ofcom recognised that retrofitting of HDFs on existing BT Wholesale DSLAMs would be disproportionate in a number of respects as well as an unnecessary and undesirable diversion of resources away from other work which benefits CPs and end-users.

BT therefore proposes that a comparable approach be used in relation to Featurenet as was agreed for IPStream. It should additionally be noted that, unlike DSLAMs, SRUs are old technology with limited new units, or capacity, available, which means it is even more important to be able to use any spare SRU capacity effectively.

2. Legal basis, scope and duration

- Legal basis: sub-paragraph c) of 5.46.1

- Scope: exemption from sections 5.46.1 and agreement under section 5.12

- Duration:

- (a) For any Featurenet orders placed from the date of this agreement and up until “existing BT Featurenet SRU installations” are withdrawn or replaced, other parts of BT will continue to use existing processes (no provision or installation of Handover Distribution Frames or LLU internal tie cables between the MDF and HDF) where the Featurenet service is provided on “existing BT Featurenet SRU installations” as defined below.
- (b) However, for any Featurenet orders placed after the date of this agreement, other parts of BT will consume on an equivalent basis HDFs and LLU internal tie cable products where the Featurenet service is provided on “new BT Featurenet SRU installations” as defined below.
- (c) For the purpose of this exemption,
 - “Existing BT Featurenet SRU installations” are defined as any BT Featurenet SRU installations provisioned or installed up to and including 30 June 2008.

- “New BT Featurenet SRU installations” are defined as any BT Featurenet SRU installations provisioned or installed as of 1 July 2008.

3. Identification of the products involved

Featurenet is a centrex and VPN voice solution providing voice networks spanning multiple sites and offering functionality that would normally be associated with a PBX. Featurenet End-User customers are large and medium corporates and governmental organisations.

4. Description of the solution proposed

BT proposes that a comparable approach be used in relation to Featurenet as was agreed for IPStream. In the case of IPStream Ofcom agreed that Openreach HDFs and LLU Internal Tie Cables would only need to be consumed in relation to new DSLAM installations, and would not be required where BT Wholesale provided IPStream using existing spare capacity on existing, installed DSLAMs.

Accordingly, with respect to Featurenet, BT proposes that Openreach HDFs and LLU Internal Tie Cables only need to be consumed in relation to Featurenet services provided over new BT Featurenet SRU installations, and would not be required where other parts of BT provide Featurenet services using existing spare capacity on existing BT Featurenet SRU installations.

For the avoidance of doubt, this means that since 1 July 2008 and for the duration of this agreement that:

- For any “new BT Featurenet SRU installations” (defined as BT Featurenet SRU installations provisioned or installed as of 1 July 2008), other parts of BT will use the EOI processes to purchase the EOI Openreach HDF and LLU internal tie cable products.
- The standard EOI charges for the Openreach HDF and LLU internal tie cables will apply to each BT Featurenet SRU installation, whether “new BT Featurenet SRU installations” or on “existing BT Featurenet SRU installations”, as defined above, so that other parts of BT will be financially and commercially in the same position as other CPs purchasing the Multiple MPF product and relevant LLU Associated Services.

In addition, BT Wholesale and/or BT Operate may continue to carry out the same activities and processes as currently employed, including where this involves BT Wholesale or BT Operate carrying out activities that could be considered to fall within section 5.12.

5. Justification for the request and impact on CPs

This request is necessary because physical retrofitting of HDFs and LLU Internal Tie Cables would be disproportionate in a number of respects as well as an unnecessary and undesirable diversion of resources. It would also result in major customer disruptions for existing Featurenet customers, as any retrofitting of HDFs and LLU Internal Tie Cables would require existing SRU installations to be disconnected and multiple rejumping/recabling to be carried out. It is not possible for other parts of BT to proactively install new SRU installations in parallel to existing SRU installations, as the manufacture of SRUs was discontinued in May 2000 and BT only has a limited inventory of new SRUs available.

The application of the EOI charge for HDFs and LLU Tie Cables to all Featurenet SRU installations means that there will be no financial advantage to other parts of BT resulting from the exemption from the requirement to consume HDFs and LLU internal tie cables on an EOI basis for "existing BT Featurenet SRU installations".

The requested exemption is therefore not expected to have a material adverse impact on CPs.

BT'S REVISED REQUEST FOR AGREEMENT IN RELATION TO MESSAGING SERVICES AND BILL DIRECT

Product: MESSAGING SERVICES, AND BILL DIRECT

Legal basis: 5.44.3

1. Reasons for request and product description

Ofcom published a statement on 3 October 2007 entitled '[Additional Requests from BT for exemptions and variations to its Undertakings under the Enterprise Act 2002 \(including Variation Number: 10\)](#)'. That statement included an agreement, and supporting request from BT, in relation to misapplying the provisions of Section 5.44.3 of the Undertakings to a limited number of people not in AS or the Downstream Divisions in support of a particular product set supplied by BT Wholesale to Communications Providers. Both the request and agreement from Ofcom's statement are attached as annexes to this further request. The original agreement became operative from 28 September 2007 and had an expiry date of 30 June 2010. This expiry date was set on the basis that that was the date by which physical systems separation would be completed. That date will no longer be applicable and therefore a new agreement is sought; this new agreement will also cover a change to the periodicity of senior management access review given successful process application to date from quarterly to half-yearly.

The coverage of the request is unchanged since the original request in that it relates to BT Wholesale's provision of messaging services. In order to provide these services, access is required to the Openreach installations on CSS, with BT Operate accessing Messaging Services as an agent on behalf of BT Wholesale. BT's main Operational Support System (OSS). 'Installations' is the term used to describe how information about a particular PSTN line is stored on CSS. Currently, these services include:

- messaging products that are provided to Openreach as part of the WLR3 product (these are Call Mapping and Wholesale 1571, Wholesale Call Minder and their variants); and
- messaging products that BT Wholesale sells to Communications Providers (CPs), including BT Retail (these include BT Answer, BT Call Minder and Fixed Line Text).

In addition, there are other BT Wholesale components that are supplied to BT Retail that require access to the Openreach installation on CSS. This is in relation to:

- Bill Direct.

Under section 5.44.3(a) of the BT Undertakings (as amended by variation number 9 which came into effect on 19 June 2007 BT is required to implement User Access Controls for OSS capability that supports, amongst other things, the Equivalence of Inputs product of Wholesale Line Rental Analogue (WLR3 Analogue) by 30 June 2007. User Access Controls are defined as 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.

In order for BT Wholesale to be able to provide these products, it needs to access the Openreach installations on CSS. Where BT Wholesale is supplying Call Mapping or Wholesale 1571 (i.e., supplying a component of WLR3), it is consistent with the Undertakings for BT Wholesale to access the Openreach installation. However, where BT Wholesale is supplying messaging products to downstream CPs, it is not supplying a WLR3 component to Openreach and so this access is not consistent with the Undertakings.

The outline process for providing these products is as follows: BT Wholesale processes the request for a product from a CP with reference to the WLR3 installation, adds a product code to CSS and then CSS drives the addition of the necessary settings on Switch Manager (the system that configures the local exchanges and the messaging platform). This access occurs through largely automated interfaces. However, where this cannot be done through automated processes, a BT Operate employee needs to manually access the Openreach installation on CSS to make the necessary changes. In practice, the products are provided on a fully automated basis in approximately 95% of cases, with no human intervention.

BT requests Ofcom's agreement under section 5.44.3 to enable continued access to the Openreach WLR3 installations on CSS post 30 June 2007 for the 5% of orders that require manual intervention by BT Operate acting on behalf of BT Wholesale. The level of access will decrease as BT migrates its users off of CSS and onto separated systems. The information obtained as a result of this access should only be used for the purposes of providing these services. As well as standard access control procedures in this particular case periodic Director level review by both the line of the teams outside AS and by AS will take place. Access by employees of the Downstream Divisions or the restricted teams within BT Operate and BT Design will not be allowed.

2. Legal basis, scope, and duration

- Legal basis: section 5.44.3
- Scope: agreement under section 5.44.3 for the products set out in section 3
- Duration: agreement until Openreach's OSS will be physically separate from the rest of BT.

3. Identification of the products involved

This request seeks Ofcom's agreement to access the Openreach WLR3 installations on CSS in relation to the following BT Wholesale products or their successors:

- **BT Answer 1571 and its variants** (personal greeting, message alert, text alert).
BT Answer 1571 is a BT-branded basic, non-personalised voicemail service. Personal Greeting allows the end user to personalise the mailbox with the customer's own greeting. With Message Alert, if the line is engaged when the

message is taken, the platform will make an outcall when the line becomes free. Text Alert allows text messages to be sent when a voicemail is received.

- **BT Call Minder and its variants** (extensions, premier, Call Minder Multi). There are three Call Minder messaging services: call minder (a standard voice message service consisting of one mailbox), Call Minder Extensions (a voice messaging service consisting of nine mailboxes, due to be reduced to five) and Call Minder Premier (a voice and fax messaging service consisting of five mailboxes and offers customers the option to rent additional mailboxes up to a total of nine). Call Minder Multi is a multi-feature, multi-user answering service that takes voicemail messages which can be accessed via a single call to 1571, due to be withdrawn from new sale. An additional Call Minder service is due to be launched, Call Minder basic this will provide the same level of features as the existing Call Minder product, but without speech recognition facility on the IVR and the Message Alert call back features.
- **Fixed line text** (including text to speech opt-out, BT text alerts and curfew options). Fixed line text allows the end user to send and receive text messages from their landline. Curfew options allow the end user to opt out of receiving texts during curfew hours. Text to speech opt out allows the end user to opt out of receiving texts altogether.
- **Bill Direct**. This is a simple billing solution that allows employees to bill any business calls made from home back to their business account.

Further information about these products is to be found at:

BT Answer 1571 and Call Minder

<http://www1.btwebworld.com/sinet/354v4p0.pdf>

Fixed Line Text

<http://www1c.btwebworld.com/sinet/SPIN080.pdf>

Bill Direct

http://www.serviceview.bt.com/list/public/notifs/01-03-2007/Cust_Opts_Bus_boo/NotificationPeriodImpl325203202_d0e224.htm

4. Justification for the request and impact on CPs

If access to the Openreach installation on CSS is removed from BT Wholesale and its agents in BT Operate BT Wholesale would no longer be able to provide these services to CPs. This would cause severe disruption for CPs and a significant deterioration in service for their end users. In addition, BT Wholesale gets no commercial advantage from this exemption vis-à-vis its competitors as it merely allows it to continue to provide important services to its customers (whether internal BT customers or other CPs). Therefore, there will be no material adverse impacts on the market or other CPs.

Annex 7

Proposed Exemptions and agreements wording

Exemptions and agreements wording

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 2002 (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 8

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 Northern Ireland (BTNI) is the organisation called BT Northern Ireland within BT, together with its dedicated support teams in BT Regions and includes any successors division to BTNI. It does not include BT employees or agents working in Northern Ireland for other parts of BT.

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.

Centrex is a service provided over the PSTN as an alternative to customers having their own Private Branch Exchange (PBX) that enterprise often operate within their individual site locations, with the PSTN providing the switching of calls between terminals on the customer's site as well as calls to and from other users of the PSTN.

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 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.

Carrier Pre-selection (CPS) is the facility offered to customers which allows them to opt for certain defined classes of call to be carried by an operator that has been selected in advance and has a contract with the customer. CPS does not require the customer to dial a routing prefix or use a dialler box.

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.

Digital Subscriber Line (DSL) is a family of technologies generally referred to as DSL, or xDSL, capable of transforming ordinary phone lines (also known as 'twisted copper pairs') into high-speed digital lines, capable of supporting advanced services such as fast Internet access and video-on-demand. ADSL, HDSL (high data rate digital subscriber line) and VDSL (very high data rate digital subscriber line) are all variants of xDSL).

Digital Subscriber Loop Multiplex (DSLAM) is located in the co-location space of an operator at an exchange site. It is composed of a multiplex and the DSL modems necessary to operate DSL services over the loops served by the operator from the exchange.

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.of.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.

Gbit/s denotes gigabits per second and is a unit of measurement of the speed of transfer of digital information. One Gbit/s is equal to 1,000Mbit/s.

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.

Narrowband is a service or connection providing data speeds up to 128kbit/s, such as via an analogue telephone line, or via ISDN.

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.

Private Branch Exchange (PBX) is a piece of technology used for connecting calls within an end user's network.

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.

Virtual Private Networks (VPNs) are used by a company or private group to make inter-site connections either for telephone speech or data as if there were dedicated leased lines between these sites. The equipment used is located within the public telecommunications operators' premises and forms an integral part of the public network but is software-partitioned to allow for a genuinely private network.

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.