



Business Connectivity Market Review

Very low bandwidth leased lines

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Consultation

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About this document

This document concerns our proposal for retail very low bandwidth (VLB) leased lines in the UK. These services provide dedicated, symmetric, data connections with either analogue or digital interfaces operating at bandwidths lower than 2Mbit/s. The most common services of this type are BT's Analogue Private Circuits and KiloStream.

In this document we are seeking stakeholders' comments on our proposals that with effect from 1 April 2016 we should remove all current regulations from BT's retail provision of VLB leased lines and also modify similar regulations which currently apply to KCOM.

Several operators of public services, such as water and energy utilities, still use some legacy data services, which provide dedicated analogue and very low bandwidth (lower than 2Mbit/s) digital connections. The number of these services is declining rapidly as users replace them with modern alternatives and the underlying equipment approaches the end of its useful life.

BT provides these VLB services throughout the UK except in Hull, where KCOM provides similar services. BT is planning to withdraw them over the next few years, and we understand that KCOM is likely to do the same.

We also set out how we plan to ensure that operators of essential public services are made aware of BT's plans to withdraw the services (as well as KCOM's, should it decide to do the same), so that affected parties can take timely steps to migrate to alternative services.

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Section 1

Executive summary

- 1.1 Very Low Bandwidth (VLB) leased lines are services that provide dedicated, symmetric,¹ data connections with either analogue or digital interfaces operating at bandwidths lower than 2Mbit/s. Although the equipment is based on technologies dating back to the 1980s, businesses and public sector organisations still use VLB leased lines to support a range of applications, including essential public services, such as:
- electricity distribution;
 - water supply;
 - river/water management;
 - traffic lights;
 - railways;
 - air traffic control; and
 - emergency services communications.
- 1.2 We currently regulate BT's provision of retail VLB leased lines throughout the UK except in the Hull area, as well as KCOM's provision of similar services in the Hull area. The equipment which BT and KCOM use to provide many of these services is reaching the end of its life and more modern alternative services are now available.
- 1.3 We are reviewing the need for continuing to regulate the provision of VLB leased lines as part of our Business Connectivity Market Review (BCMR). Based on our work so far, we consider that there is not likely to be a need to continue to impose retail regulation on BT after 31 March 2016 because:
- users can migrate to alternative services and will increasingly do so over the next three years;
 - BT is managing an orderly process of service withdrawal of VLB leased lines over the next few years; and
 - further protection will be provided by regulation of the related upstream wholesale low bandwidth TISBO market,² which will remain in place.
- 1.4 Therefore, in this document we propose that with effect from 1 April 2016, we will no longer regulate BT's provision of retail VLB leased lines. We acknowledge, however, the continued use of these services to support important public services and we have therefore developed an engagement plan to accompany this proposal.
- 1.5 We also note that BT has offered a voluntary commitment not to raise prices by more than 8% above RPI per annum until these services are withdrawn, which includes the

¹ They offer the same data rate in both directions.

² The wholesale low bandwidth TISBO market includes circuits of 2Mbit/s up to and including 8Mbit/s.

period covered by this BCMR (from April 2016 to March 2019). This will provide some reassurance to customers as they plan migration of their services.

- 1.6 We understand that BT is planning to withdraw retail VLB leased lines primarily because the network upon which it provides a large portion of them is ageing and is approaching the end of its life. BT has announced that it will withdraw most of these VLB leased lines – including Analogue Private Circuits (including Own Exchange Analogue Services³) and KiloStream – in 2020. We understand that the key dates are:
- 1 September 2016 – end of new supply; and
 - 31 March 2020 – withdrawal of all remaining existing services.^{4 5}
- 1.7 We consider that continuing to require BT to supply these services would not be in the best long terms interests of users, as BT has advised us that at some point in the future it will not be able to reliably maintain them.
- 1.8 Therefore, we want to ensure that end-users are aware of BT's plans so that they can arrange to migrate to more modern and sustainable alternatives, if they are not already in the process of doing so.
- 1.9 We also outline in this document our proposals for regulation of VLB leased lines in the Hull area beyond March 2016. KCOM has not yet announced plans to withdraw its retail VLB leased lines in the Hull area, but we understand that it intends to do so. We are therefore proposing to alter the regulations to permit KCOM to withdraw the new supply of VLB leased lines as soon as April 2016, and to withdraw existing services upon providing its customers with at least two years' notice.
- 1.10 As VLB leased lines support essential public services, alongside this consultation we are undertaking a wider programme of engagement in order to raise awareness among operators of essential services of their need to take action to migrate to alternative services. In particular, as part of this programme we have sought the assistance of the other sector regulators, as we consider that they are best placed to raise awareness in their respective sectors, and that this work ties in closely with any responsibilities they may have in relation to resilience.
- 1.11 In addition, we will be contacting communications providers and service providers who sell VLB leased lines using retail or wholesale services purchased from BT and KCOM and asking them to ensure that they take adequate steps to inform their end-users of the withdrawal of these services, where they have not already done so.
- 1.12 We are asking stakeholders to respond to the proposals set out in this consultation by 31 July 2015. It is important to be clear that the scope of responses should be confined to the issues raised within this document. Those wishing to raise other matters relating to the regulation of leased lines should respond to our consultation on the BCMR.⁶

³ An Own Exchange Analogue Service is where both ends of the circuit are served from a single exchange.

⁴ BT will be withdrawing DealerStream 1-6 and CitySure before 2020 on 31 March 2018.

⁵ BT, *BT's TDM services – product roadmap update (Mar 2015)*, 26 March 2015, http://www.globalservices.bt.com/static/assets/pdf/campaign/tdm_services/TDM_Roadmap_Mar_2015_Iss6.pdf

⁶ We are currently in the process of reviewing the markets for leased lines services as part of our Business Connectivity Market Review 2016 (BCMR 2016). This document relates to the retail market for VLB leased lines, which is one of these markets. Our consideration of the other retail and

Section 2

Background

2.1 This document concerns our proposal for retail VLB leased lines in the UK.⁷ These services provide dedicated, symmetric, data connections with either analogue or digital interfaces operating at bandwidths lower than 2Mbit/s. The most common services of this type are BT's Analogue Private Circuits and KiloStream.

BT is currently subject to regulatory obligations

2.2 In concluding our BCMR in 2013,⁸ we identified the retail market for VLB Traditional Interface (TI) services at bandwidths below 2Mbit/s in the UK (excluding the Hull area) as susceptible to *ex ante* regulation. We found BT to have significant market power (SMP) in the provision of retail VLB leased lines and as a result we imposed certain regulatory obligations to address the competition problems that we had identified.

2.3 The following regulatory obligations currently apply to BT in this market:

- obligation to supply retail leased lines: a requirement to supply existing VLB analogue circuits and digital leased lines at bandwidths below 2Mbit/s until it gives end-users and us notice of at least one year of their withdrawal;
- no undue discrimination: a requirement not to unduly discriminate in the provision of all analogue circuits and digital services at bandwidths below 2Mbit/s;
- obligation to publish a reference offer: a requirement to publish prices, terms and conditions for all analogue circuits and digital services of bandwidths below 2Mbit/s, and not to depart from the terms specified in the reference offer except with our permission;
- cost accounting obligations: a requirement to maintain a cost accounting system, which is a set of processes and systems that permit the costs of individual services to be determined; and
- safeguard price cap: a prohibition against raising:
 - the price of individual analogue services above RPI+10% per year; and
 - the collective price of all analogue services above RPI+2.25% per year.

wholesale leased lines markets in the UK can be found in our May 2015 BCMR Consultation, <http://stakeholders.ofcom.org.uk/consultations/bcmr-2015/>, published on 15 May 2015.

⁷ Note that for historic reasons the Hull Area is treated separately from the rest of the UK, so whilst we have summarised our proposals for this area in Section 6 of this document, our full reasoning for this separation within our market definitions can be found in the May 2015 BCMR Consultation at Section 6.

⁸ Ofcom, *Business Connectivity Market Review, Review of retail leased lines, wholesale symmetric broadband origination and wholesale trunk segments, Statement*, 28 March 2013, <http://stakeholders.ofcom.org.uk/consultations/business-connectivity-mr/?a=0>

EU Response to BCMR 2013 Consultation

- 2.4 Prior to publishing the March 2013 BCMR Statement, we notified the European Commission (EC) of our proposals. Regarding our proposals for the VLB TI retail market, the EC noted our analysis and the data we had provided, which it said appeared to indicate a necessity to continue regulation in the relevant retail markets for a limited period. Specifically, the EC recognised our arguments for maintaining retail regulation, in particular with regard to the specific needs of certain captive customers who provide key services and who are currently still in the process of migrating from the regulated retail product to different services. However, the EC requested that we monitor the evolution of this migration closely and withdraw retail regulation as soon as migration has occurred to a sufficient degree, which would render continued retail regulation obsolete.

Our call for inputs

- 2.5 When we started this BCMR, we published a Call for Inputs⁹ (April 2014 BCMR CFI) to gather stakeholders' views on a number of key issues. One of the topics that we highlighted was the future regulation of the retail market for VLB leased lines.¹⁰
- 2.6 In the April 2014 BCMR CFI, we considered that it may not be proportionate for us to maintain retail regulation of this market after March 2016, the end of the current review period. Our reasoning was that, given the prospective withdrawal of these services, the declining volumes and the extended notice already given to end-users responsible for essential services, the scope for harm is likely to have diminished considerably by the time we conclude this BCMR. We considered that any risk of harmful action by BT would also be likely to be mitigated by accelerated migration of end-users to alternative services.

Responses to our Call for Inputs

- 2.7 We received three responses on this matter:
- 2.7.1 BT supported Ofcom's suggestion to deregulate this market, commenting that as most organisations responsible for managing critical national infrastructure have plans to migrate in a timely manner, there was no longer a need for retail regulation to protect consumers. Moreover, BT argued that as a matter of principle we should not continue to regulate retail markets that are no longer listed in the EC's Relevant Markets Recommendation.¹¹
- 2.7.2 SSE argued that retail regulation should be maintained as electricity distribution network operators use these types of circuits for critical applications, i.e. protection and control of electricity networks, and will still be using these services during the next BCMR period. [§<].

⁹ Ofcom, *Business Connectivity Market Review: Timetable and initial call for inputs*, 1 April 2014, <http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity-market-review/summary/Business-Connectivity-Market-Review.pdf>

¹⁰ More accurately these are known as VLB traditional interface (TI) leased lines, as we refer to their interface technology as 'traditional'.

¹¹ BT, *BT's response to Ofcom consultation document "Business Connectivity Market Review: Timetable and initial call for inputs"*, 27 May 2014, http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity-market-review/responses/British_Telecommunications_PLC.pdf, p31

2.7.3 A communications provider [§].

2.8 We respond to these comments in our analysis of this market in Section 5.

BT is planning to withdraw its retail VLB leased lines

2.9 Since 2006, BT has been planning to withdraw its retail VLB leased line services – including Analogue Private Circuits and KiloStream.

2.10 BT has advised us that there are two principal reasons that underpin this withdrawal. The first is that the volumes for these legacy services have been in steep decline for many years and are expected to continue to decline in the future as customers move to more modern alternatives, such as Ethernet, EFM (Ethernet First Mile) and fibre broadband.¹²

2.11 The second reason is that BT is planning to close the ageing underlying platform of these services in 2021. The platform, known as the Digital Private Circuits Network (DPCN) is now over 30 years old and BT has advised us that spares are becoming increasingly difficult to source, and that the technical skills required to maintain it are more difficult to retain. BT expects that both the maintenance costs and the risk of service failure will therefore increase over time.

2.12 While linked to the closure of the DPCN, BT has stressed that the withdrawal of these services is at the product-level. It therefore also encompasses some VLB services that do not run over the DPCN, in particular Own Exchange Analogue Services. This also means BT has a separate timetable for the closure of the DPCN and also for the wholesale products that it supports (known as Private Circuits to a Point of Connection or ‘PPCs’). The withdrawal of PPCs is discussed further in Section 7.

2.13 In the BCMR 2008¹³ concerns were raised about BT’s initial plans to withdraw retail VLB leased lines, under which services would have been withdrawn over the next four to seven years. There were particular concerns about the lack of suitable substitute services for some end-users, including those with responsibility for critical national infrastructure. In view of the concerns we imposed an obligation for BT to continue to supply existing services and BT gave voluntary undertakings concerning the supply of new services. In those undertakings BT committed to:

- continue to supply new analogue retail circuits until 1 January 2011, or earlier if, subject to industry agreement and consent by Ofcom, the underlying platform is closed at an earlier date; and
- continue to supply new sub-2Mbit/s digital retail circuits until 1 January 2011, or earlier if, subject to industry agreement and consent by Ofcom, the underlying wholesale products are withdrawn from new supply at an earlier date.

2.14 BT subsequently reviewed its plans and in an announcement dated 15 January 2010, deferred service withdrawal to give users more time to migrate to other services.¹⁴ At

¹² See chart 3.1 in Section 3.

¹³ Ofcom, *Business Connectivity Market Review: Review of the retail leased lines, wholesale symmetric broadband origination and wholesale trunk segments markets, Statement and Consultation*, 8 December 2008,

<http://stakeholders.ofcom.org.uk/binaries/consultations/bcmr08/summary/bcmr08.pdf>

¹⁴ BT, *Briefing, Product Update – BT’s TDM Services*, 15 January 2010, found at Annex 5

that time BT's message to its retail customers was that where levels of demand for these services remained commercially viable, BT will continue to support them on existing platforms, subject to other relevant services being available, until March 2018, at which point they will be fully withdrawn from service.

- 2.15 BT also committed to give at least three years' notice if it decided to bring the withdrawal date of specific services forward.
- 2.16 On 27 April 2011, BT offered to renew this voluntary undertaking, committing to supply new analogue and sub-2Mbit/s retail leased lines until December 2013, or earlier if, subject to industry agreement and consent by Ofcom, the underlying platform was to be closed at an earlier date. Ofcom accepted these undertakings on 26 May 2011.¹⁵
- 2.17 On 18 November 2011, BT announced the withdrawal of a range of KiloStream and KiloStream N services.¹⁶ This was to be a two-stage withdrawal, with new supply being stopped in November 2012 and existing services being withdrawn approximately two years later. The services included in this withdrawal were:
- All KiloStream services at bandwidths below 48Kbit/s (i.e. 2.4Kbit/s, 4.8Kbit/s, 9.6Kbit/s and 19.6Kbit/s); and
 - All KiloStream N services except 128Kbit/s, 256Kbit/s and 512Kbit/s (i.e. 192Kbit/s, 320Kbit/s, 384Kbit/s, 448Kbit/s, 576Kbit/s, 640Kbit/s, 704Kbit/s, 768Kbit/s, 832Kbit/s, 896Kbit/s, 960Kbit/s and 1024Kbit/s).
- 2.18 BT's position with regards to analogue and the remaining KiloStream services remained unchanged.
- 2.19 On 28 November 2012, BT formally announced the withdrawal from new supply of the services listed above.¹⁷ BT also confirmed that its withdrawal of new services would be approximately, but no earlier than, December 2014. Once again, BT's position with regards to analogue and the remaining KiloStream services remained unchanged.
- 2.20 We noted BT's commitments to a March 2018 withdrawal for remaining services and a three-year notice period in our March 2013 BCMR Statement.¹⁸ Nonetheless, given the critical nature of some of the services that used these leased lines, we considered that it remained appropriate to retain regulatory oversight of BT's withdrawal. We therefore imposed regulations on BT to continue to supply existing users of these services until it gives both end-users and us at least one year's notice. This was to act as a backstop and provide additional assurance to end-users that sufficient notice would be given to allow them to migrate critical applications to alternative services.¹⁹
- 2.21 In the March 2013 BCMR Statement, we set out our view that these services should be regarded as legacy services that are approaching the end of their life, and that it would have been inappropriate for us to seek to extend the availability of these

¹⁵ <http://stakeholders.ofcom.org.uk/consultations/bcmr08/renewal/>

¹⁶ BT, *Briefing, Product Update – BT's TDM Services*, 18 November 2011, found at Annex 6

¹⁷ BT, *Briefing, Product Update – BT's TDM Services*, 28 November 2012, found at Annex 7

¹⁸ Paragraph 10.23, Ofcom, *Business Connectivity Market Review, Review of retail leased lines, wholesale symmetric broadband origination and wholesale trunk segments, Statement*, 28 March 2013. <http://stakeholders.ofcom.org.uk/consultations/business-connectivity-mr/?a=0>

¹⁹ Ibid, paragraphs 10.53 – 10.57 and 10.75 – 10.77

services artificially through SMP regulation. We therefore chose not to seek a further voluntary undertaking from BT, nor to impose SMP regulation, in relation to supplying new services.²⁰

2.22 On 1 August 2014, BT announced that it would be stopping new supply for the remaining VLB leased lines from **1 September 2016**.²¹ This included:

- all Analogue Private Circuits, including Own Exchange Analogue Services; and
- all remaining KiloStream and KiloStream N (i.e. 48Kbit/s and 64Kbit/s, and 128Kbit/s, 256Kbit/s and 512Kbit/s respectively)

2.23 In April 2015, BT announced that it would extend its support of the majority of existing VLB leased lines until **31 March 2020**, after which time they would be withdrawn.²² The exceptions to this are DealerStream 1-6 and CitySure, which are designated for withdrawal on 31 March 2018.

Impact assessment

2.24 The analysis presented in this document, and the relevant sections of the May 2015 BCMR consultation, constitutes an impact assessment as defined in section 7 of the Communications Act 2003.

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

http://stakeholders.ofcom.org.uk/binaries/consultations/ia_guidelines/summary/condoc.pdf

Equality impact assessment

2.26 As outlined above, this consultation is one part of our BCMR 2016. Our Equality Impact Assessment for this market review is contained at Annex 29 of the May 2015 BCMR Consultation.

²⁰ Ibid, paragraph 10.52

²¹ For Analogue Private Circuits:

http://www.bt.com/pricing/current/Private_Cir_boo/0377_d0e14.htm#0377-d0e14 [Accessed on 19 February 2015]; For KiloStream:

http://www.bt.com/pricing/current/Private_Cir_boo/1321_d0e5.htm#1321-d0e5 [Accessed on 19 February 2015]

²² BT, *BT's TDM services – product roadmap update (Mar 2015)*, 26 March 2015,

http://www.globalservices.bt.com/static/assets/pdf/campaign/tdm_services/TDM_Roadmap_Mar_2015_Iss6.pdf

Our next steps

- 2.27 We invite comments from interest parties on the matters covered in this document, including our provisional conclusion that the retail market for VLB leased lines is no longer susceptible to *ex ante* regulation and our proposals in relation to VLB leased lines in the Hull area. The deadline for stakeholders to respond to this consultation is 31 July 2015. Parties wishing to submit responses should refer to Annex 1, which outlines the possible ways in which to do so.
- 2.28 We plan to publish our final conclusions in spring 2016 alongside our conclusions for the other leased lines markets in the whole of the UK.

Section 3

Review of market developments

- 3.1 In this section we set out the market developments that we consider are relevant to our review of this market. In particular, we present our view on how prepared organisations responsible for critical national infrastructure (CNI operators) are to migrate from VLB leased lines to alternative services.

VLB leased lines are legacy services whose volumes are in steep decline

- 3.2 VLB leased lines are amongst the oldest leased lines in use in the UK and are now considered legacy technology. A wide range of modern alternatives are now available, including broadband services, superfast broadband services and Ethernet leased lines services delivered over either copper wire or optical fibre.
- 3.3 Use of VLB leased lines has been in steep decline for a number of years and this is likely to continue until the withdrawal, as shown in Figure 3.1 below. As mentioned above, this is one of the reasons for BT's decision to withdraw these services.

Figure 3.1: Actual volumes and estimated volumes for VLB leased lines

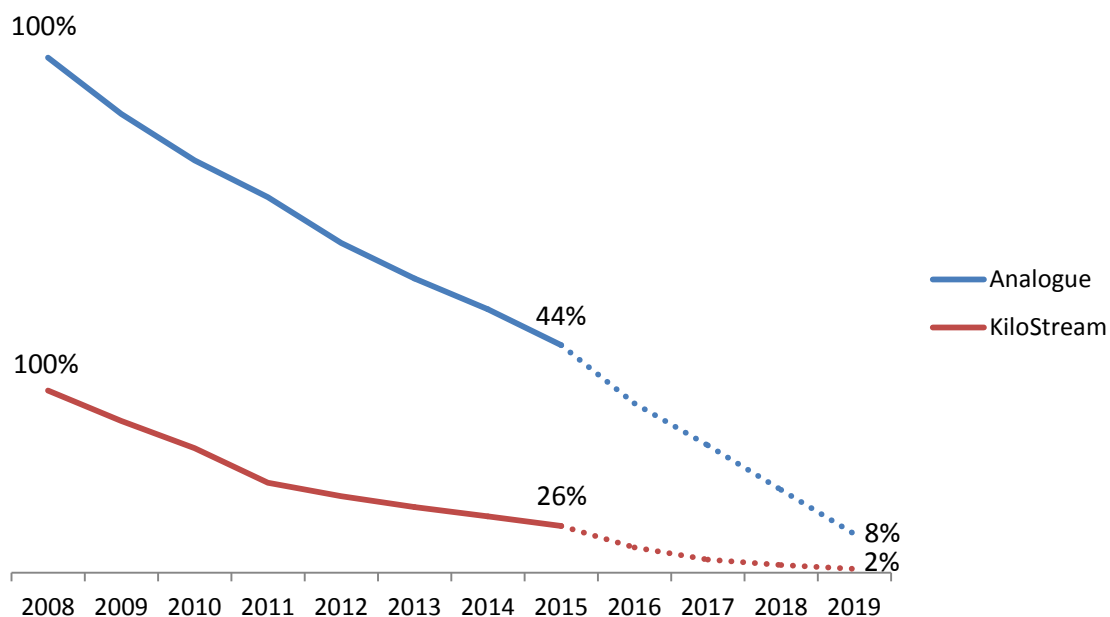


Chart based on data and projections received from BT. Solid line is actual volumes, dotted line is projected volumes. The percentages are calculated using 2008 as a base.

Awareness of the withdrawal is good among CNI operators

- 3.4 One of the reasons why we decided in 2013 to continue to impose regulation on the provision of VLB leased lines was that we considered it important to maintain regulatory oversight of the withdrawal of these services, because they are used by CNI operators. For example, SSE explained in its response to the April 2014 BCMR CFI that these services are used for protection and control of electricity networks.

- 3.5 As part of our work in this area and to inform our thinking, we collected information from CNI operators that still use VLB leased lines. Our aim was to make an initial assessment of how aware CNI operators are of the impending withdrawal and how prepared they are to migrate to alternative services. From this information gathering exercise it appears that the level of awareness is, in general, good among CNI operators in most sectors and that most CNI operators are either formulating or implementing plans to migrate to more modern technologies. We did, however, also find that there is some confusion among CNI operators as to whether Own Exchange Analogue Services are included within this withdrawal. We set out below our findings in relation to key sectors.

Energy²³

- 3.6 Electricity distribution network operators (EDNOs) are companies that own and manage the networks that carry electricity from the high voltage transmission grid to industrial, commercial and domestic users. There are 14 EDNOs in Great Britain, and most use VLB leased lines. We understand from Ofgem that all the EDNOs are aware of BT's plans to withdraw these services. Five EDNOs should have already completed their migration, while the rest have confirmed that they will have completed their migrations onto other services by 31 March 2018.
- 3.7 We understand that Northern Ireland Electricity, which is responsible for procurement, transmission and distribution of electricity around Northern Ireland, also uses VLB leased lines and is currently investigating alternative technologies.

Water

- 3.8 We understand that a number of the water utilities in England and Wales use VLB leased lines for telemetry purposes. However, while we believe the large companies are aware of the withdrawal and already have migration plans in place, we have been unable to ascertain the extent to which smaller water utilities are aware of the withdrawal, or have formed or implemented migration plans. As we explain below, as part of our programme of engagement we are currently working with Ofwat and the Telecommunications Association for the UK Water Industry (known as TAUWI) to gain certainty of the awareness and preparedness of the water utilities for the service withdrawal.
- 3.9 Scottish Water, the sole provider of water and waste water services in Scotland, uses VLB leased lines for telemetry and monitoring purposes. Scottish Water is aware of the withdrawal and is currently considering how best to replace these circuits.
- 3.10 Northern Ireland Water (NIW), the sole provider of water and sewerage services in Northern Ireland, also uses VLB leased lines for telemetry services. NIW is already working with BT on migration plans.

Rail

- 3.11 Network Rail, the organisation responsible for the UK's railway network, uses VLB leased lines to support various operational services, including signalling, switching and power distribution substations. Network Rail has chosen to build its own fibre network and has already begun migrating from VLB leased lines onto this network.

²³ EDNOs in Great Britain, i.e. in England, Scotland and Wales, fall within the regulatory remit of Ofgem, while Northern Ireland Electricity falls within the remit of the Northern Ireland Authority For Utility Regulation (URRegNI).

Road traffic management

- 3.12 VLB leased lines are used by many of the UK's traffic authorities for road traffic management. For the most part, this means to control traffic light signalling. While alternative technologies were unsuitable for traffic authorities in the past, technology has now been developed that has removed the remaining technical barriers to migration. Awareness of BT's withdrawal plans is generally good among traffic authorities and many traffic authorities are in the process of migrating onto other technologies, such as ADSL broadband. The biggest user in this category is Transport for London, which is currently implementing a migration plan that is due to finish in March 2017.

Environment

- 3.13 We spoke to the environment agency in each of the four countries in the UK.
- England's Environment Agency is the largest user in this category and uses VLB leased lines for various purposes, including flood defence monitoring, monitoring river levels and asset control. In December 2014, the Environment Agency launched a project to identify and replace all its VLB leased lines, and plans to do so by March 2018.
 - The Northern Ireland Environment Agency had a small number of VLB leased lines, but has recently migrated to wireless technology.
 - The Scottish Environment Protection Agency used to use analogue lines, but has now migrated onto BT's 21CN infrastructure.
 - Natural Resources Wales does not use VLB leased lines at all.

Air traffic control

- 3.14 NATS is the organisation that provides air traffic control services at 16 of the UK's airports, including London Heathrow, London Gatwick and Manchester. In addition, it provides air control services to the Ministry of Defence at [redacted]. NATS uses VLB leased lines for a variety of purposes, some at specific locations and others that connect its sites together. NATS is aware of the withdrawal of VLB leased lines and has plans to move to an IP-based solution by March 2018, although NATS was not clear whether Own Exchange Analogue Services were included in this withdrawal.

Emergency services

- 3.15 Airwave, the provider of the radio communications network for the emergency services, uses VLB leased lines to connect many of its network sites. Airwave is already implementing its migration plan to move from leased lines to microwave technology and plans to complete this transition by April 2016.
- 3.16 We understand that some law enforcement agencies also use VLB leased lines for a range of different purposes. As yet we have been unable to ascertain their awareness of, or preparedness for the withdrawal. As we explain below, as part of our programme of engagement we are currently working with the Home Office to ensure awareness of the service withdrawal among affected agencies.

Question 3.1: Do you know of other CNI operators that will be affected by the withdrawal of VLB services that we have not considered above? If so, please provide

details of these CNI operators, and, if possible, please outline their awareness and preparedness for the withdrawal.

BT has been proactively engaging with its customers

- 3.17 During the last few years, BT has been engaging with key customer groups in order to raise awareness of the service withdrawal. We understand that until now this engagement has been focused on four particular groups:
- CNI operators;
 - customers that use a large number of VLB leased lines;
 - customers that have complex technological arrangements; and
 - communications providers.
- 3.18 We also understand that BT has engaged with both the Electricity Networks Association and TUAWI in order to engage with the energy and water utilities.

BT has offered a voluntary commitment on prices

- 3.19 Our research during this market review indicates that CNI operators, who we have identified as the group least able to migrate quickly, have made significant progress with regards to both planning and implementing migration, as noted above. By the end of this review period in April 2016, circuit volumes will have fallen significantly and users' migrations will be even further advanced. A combination of reduced volumes and greater ability of end-users to accelerate migration to alternatives means that both BT's ability and incentive to set excessive prices appears much reduced.
- 3.20 We have also had regard to BT's offer of a voluntary commitment on the pricing of VLB services. This is a commitment by BT not to raise the prices of any retail VLB leased lines by more than 8% above RPI per annum until these services are withdrawn on 31 March 2020.
- 3.21 The voluntary commitment received from BT can be found at Annex 8.

Question 3.2: Are there any other developments since the last BCMR or prospective developments that may be relevant to our review of this market? Please identify specific developments, explaining why they may be relevant.

Section 4

Risk mitigation plan

Our proposal to stop regulating retail VLB leased lines

- 4.1 As set out above, we currently regulate BT's provision of retail VLB leased lines in the UK. In the course of this market review we have been considering whether to continue regulating these services in the next BCMR period, commencing April 2016. Our current view, which is set out in full in the next section, is that these services should no longer be regulated. From a regulatory point of view, the effect of this would be that BT would have the commercial freedom to set prices for VLB leased lines and, more importantly, withdraw supply of existing services.
- 4.2 The primary risk we have identified in relation to this withdrawal is that CNI operators might only become aware of it when there is insufficient time before the withdrawal to migrate onto alternative services, potentially leading to a disruption of essential services. In this section we set out our risk mitigation plan, which is a programme of engagement that will attempt to ensure that every CNI operator affected by the withdrawal is aware of the scope of the withdrawal, its timetable, and of the need to migrate onto alternative services.

Programme of engagement

- 4.3 As we have said in the preceding sections, our concern during the last market review was the potential impact of the withdrawal of VLB leased lines on CNI operators who use them. Our concerns have lessened since then to the extent that we are currently of the view that we should stop regulating these services. In response to the remaining risk posed by the withdrawal of these services, we have embarked on a programme of engagement to mitigate any residual risk to CNI operators. This is aimed at ensuring that CNI operators are aware of BT's plan and the timetable for withdrawing these VLB leased lines. This programme was launched in February 2015 and will continue until at least the end of this review in March 2016. This consultation forms a key part of this programme of engagement.
- 4.4 We outline the different parts of our programme below.

Sector regulators

- 4.5 We consider that the various sector regulators are best placed to increase awareness among the CNI operators within their sector. Moreover, a number of the sector regulators are responsible for resilience matters in their respective sectors. Therefore, in March of this year we wrote to the following sector regulators alerting them of this matter and requesting their assistance in increasing awareness among CNI operators in their sectors:
- Civil Aviation Authority;
 - Financial Conduct Authority;
 - Ofgem (Office of Gas and Electricity Markets);
 - Ofwat (The Water Services Regulation Authority);

- Office of Rail Regulation;
- Payment Systems Regulator;
- Northern Ireland Authority For Utility Regulation (URegNI); and
- WICS (Water Industry Commission for Scotland).

4.6 A template letter can be found at Annex 9.

4.7 We understand that each of these regulators has already engaged with CNI operators in their sectors to understand their current reliance on VLB leased lines and their plans for migrating onto alternative services. The regulators will also be circulating this consultation to affected stakeholders so that they may comment on our proposals.

4.8 We have also raised this issue within the UK Regulators Network (UKRN).²⁴ The UKRN comprises of all the economic regulators in the UK, with the aim of ensuring effective cooperation between sectors. Given that this issue spans many of the sectors represented in the UKRN, we considered that it would be helpful to include the UKRN in this programme.

Relevant industry associations

4.9 We have elicited the help of a number of industry associations in order to assist us in increasing awareness of the withdrawal. This has included:

- British Association of Public-Safety Communications Officials (BAPCO);
- Energy Networks Association;
- Federation of Communications Services;
- TAUWI (Telecommunications Association for the UK Water Industry);
- Traffic System Group; and
- UK Cards Association.

4.10 Each of these associations will be highlighting this consultation to its members. In addition, some have agreed to arrange specific initiatives to increase awareness of the withdrawal amongst their members.

CNI operators

4.11 In some particular cases we have engaged directly with CNI operators. This is where the operators do not fall within the purview of any sector regulator and we are not aware that they are members of an industry association. This has included:

- Environment Agency;
- Scottish Environment Protection Agency;

²⁴ <http://www.ukrn.org.uk/>

- Northern Ireland Environment Agency; and
- Natural Resources Wales.

Communications providers

- 4.12 We have maintained close contact with BT since we began this market review and have urged BT to actively engage with its customer base about the withdrawal.
- 4.13 In addition to BT, other communications providers resell BT's retail analogue and KiloStream services to end-users. Some also provide their own retail VLB leased line services using VLB PPCs, the wholesale equivalent to KiloStream provided by BT. This presents an additional risk, as BT has no visibility of the end-users of these services and thus no way of communicating with them about its withdrawal arrangements. To mitigate against the risk of harm to this category of end-users, we will be writing to all CPs that sell retail VLB leased lines to alert them to the withdrawal and to seek assurances that they will give sufficient notice to their customers of the need to migrate to alternatives.
- 4.14 The list of the CPs that we will be writing to can be found at Annex 10 alongside a generic template of the letters sent.

Government bodies

- 4.15 We have identified a number of CNI operators that do not sit within the remit of any specific sector regulator. We have therefore chosen to write to the relevant Government departments, who have responsibilities in those sectors. In particular, we have written to:
- the Home Office about law enforcement agencies; and
 - the Ministry of Defence about organisations in the defence sector.

Question 4.1: Are there industry associations among the CNI community that you consider we need to contact to increase awareness of the withdrawal of these services?

Question 4.2: Do you know of any other category of CNI operator that will be affected by the withdrawal, but that would not become aware of it through our programme of engagement? If so, please provide details of the category of CNI operator and your view on how best to raise awareness with them.

Section 5

Proposal to deregulate the VLB TI retail market

- 5.1 In this Section we set out why we consider it to be appropriate for us to stop regulating BT's retail provision of VLB leased lines in the UK (excluding the Hull area).
- 5.2 We propose to withdraw *ex ante* regulation of these services because the particular market circumstances mean that it is possible to remove regulation. In reaching this view, we have taken account of the fact that retail VLB TI services are used by CNI operators and that BT is expected to remain the largest supplier of them. That is why we have undertaken a programme of engagement with users, with other regulators, and with communications providers, in order to ensure that CNI users are aware of the need to migrate to alternative services and have appropriate plans in place to do so. Our conclusion that regulation is no longer justified has only been reached in the light of these steps, as well as the other measures to protect users described in this document.
- 5.3 We explain below why we consider that the 'retail market for VLB TI leased lines' no longer satisfies the EC's three criteria test, which is the formal test applied to determine whether markets are suitable for *ex ante* regulation. We set out the practical effect of our provisional decision at the end of this section.

Introduction

- 5.4 The main product and services markets whose characteristics may be such as to justify the imposition of *ex ante* regulatory obligations are identified in the EC Recommendation.²⁵ Ofcom, as the relevant NRA in the UK, has a duty to define national markets appropriate to national circumstances, in particular relevant geographic markets within its territory, taking utmost account of the EC Recommendation and the SMP Guidelines.²⁶
- 5.5 Insofar as is relevant, the EC Recommendation states the following:
- "Ex ante regulation imposed at the wholesale level should be considered sufficient to tackle potential competition problems on the related downstream market(s)...Should a national regulatory authority nonetheless demonstrate that wholesale interventions have been unsuccessful, the relevant retail market may be susceptible to *ex ante* regulation provided that the national regulatory authority has found that the three-criteria test prescribed in this Recommendation is met"²⁷;

²⁵ See paragraph 36 of the SMP Guidelines. Recommendation 2014/710/EC of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services.

²⁶ See Article 15(3) of the Framework Directive (see also Recital 5 of the EC Recommendation).

²⁷ See Recital 18.

- “National regulatory authorities should...apply the three-criteria test to those markets listed in the Annex to Commission Recommendation 2003/311/EC²⁸ and to Recommendation 2007/879/EC which are no longer listed in the Annex to this Recommendation if they are currently regulated in the light of national circumstances, in order to assess whether, on the basis of such national circumstances, such markets are still susceptible to *ex ante* regulation”²⁹.

5.6 Having determined in the BCMR 2013 that the VLB TI retail market was susceptible to *ex ante* regulation, we set out below how, in our provisional view, the three criteria test is no longer satisfied in relation to the VLB TI retail market. If following consultation we confirm our provisional finding we would not identify this market for the purposes of this market review and the regulations that are currently in place in this market would be withdrawn on 31 March 2016 when we conclude our review.

The three criteria test

5.7 When identifying markets other than those in the EC’s Recommendation, we should ensure the following three criteria are cumulatively met for each market:

- i) the presence of high and non-transitory barriers to entry;
- ii) a market structure which does not tend towards effective competition within the relevant time horizon; and
- iii) the insufficiency of competition law alone to adequately address the market failure(s) concerned.³⁰

5.8 Failure to meet any of the three criteria would indicate that the market should not be identified as susceptible to *ex ante* regulation.³¹

The three criteria test applied to the VLB TI retail market

5.9 We need to review the VLB TI retail market because BT’s provision of VLB TI retail services is currently regulated, following our finding in the BCMR 2013 that BT had SMP in this market.

5.10 The first step in any such review is to define the relevant market. In doing so, we recognise that market definition is a means to an end, and the end is the identification of market power where it exists. The key to doing so is to determine whether constraints on prices are sufficient to prevent BT exploiting customers by raising prices.

5.11 We consider that the relevant market remains the narrowly-defined VLB TI retail market, but, as we explain in the above chapters, this market has unusual characteristics, and we expect that it will disappear as users migrate to other services. The products in this market are legacy products for which more modern substitutes are now available. Users of VLB TI retail products are now migrating or

²⁸ Commission Recommendation 2003/311/EC of 11 February 2003 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services.

²⁹ See Recital 22.

³⁰ See paragraph 2 of the EC Recommendation.

³¹ See Recital 17 of the EC Recommendation.

planning to migrate to these more modern substitutes, but we would not expect to see any migration in the opposite direction. As we adopt a narrow market definition, the services to which customers are migrating are treated as outside the VLB TI retail market. This means that we need to recognise the price-constraining effect of switching to these alternative products at the stage of assessing whether there is market failure due to market power.

- 5.12 In the BCMR 2013 we concluded that the three criteria test was satisfied because there were high structural barriers to entry in this market and little prospect of effective competition emerging given its legacy nature. BT retained a near 100 per cent share of analogue services and more than 60 per cent of VLB digital services. We also considered that competition law alone would not adequately address the market failures. In particular we were concerned that:
- absent *ex ante* regulation BT might engage in discriminatory practices or withdraw services without sufficient notice, potentially leading to a failure of the electricity or water supply; and
 - BT might charge excessive prices for analogue services given the absence of retail competition and users' inability to migrate quickly to alternative services.
- 5.13 We considered that *ex ante* regulation would be more effective than competition law in guaranteeing a timely and effective response to any such practices. Consequently we imposed *ex ante* regulation on BT designed to address these concerns, including a requirement to give notice of service withdrawal and a safeguard cap charge control on retail analogue prices.
- 5.14 Some stakeholders said in their responses to the April 2014 BCMR CFI that, as VLB TI retail products would continue in use to support CNI applications during the review period, retail regulation should remain in place. We consider that the importance of CNI uses is not by itself an indicator that retail regulation is justified. This depends on the existence of market failure and passing of the three criteria test. We set out our views on this below.
- 5.15 Our analysis of potential market failures has changed from the position identified in this retail market in the BCMR 2013. Volumes in this market are collapsing and most customers have migration arrangements in hand to move to alternative services. The available alternatives are provided in markets which are typically competitive at the retail level, supported where necessary by regulation at the wholesale level. In addition, we are proposing to retain *ex ante* regulation on the related upstream wholesale low bandwidth TISBO market. In this context the possibility of some price increases would not indicate a market failure, but instead provide useful pricing signals to customers on the need for migration to alternatives.
- 5.16 In the light of these developments, we now consider that the market failures identified previously are no longer present in this market and that competition law is sufficient to address any concerns which might arise. As a result, the three criteria test set out above is no longer satisfied, as we explain below.
- 5.17 We do not think that it is likely that there will be additional market entry or that BT's competitors will gain significant share of the supply of retail VLB TI leased lines within the timeframe of this review. Demand for VLB TI retail leased lines is in long-term decline and, in addition, BT still has advantages arising from its ubiquitous network and existing connections to many customers. In the case of analogue services, BT does not supply a wholesale service and competitive supply would require significant

sunk costs to be incurred upfront, particularly related to network extension. We believe BT to have a high share of the supply of retail VLB TI leased lines and we do not expect this to change.

5.18 Rather, we consider that the three criteria are no longer satisfied because the market failures identified previously are no longer present. In particular, as we describe elsewhere in this document, we have taken steps to ensure that CNI operators that use retail VLB TI leased lines are aware of the need to switch to alternative services and are able to do so. Our research indicates that significant progress has been made since the last BCMR:

- the remaining technical barriers to migration have been addressed;
- most CNI operators now have plans to move to alternative services before BT withdraws the VLB services, including self-provided fibre, ADSL broadband, microwave and higher bandwidth digital leased lines;
- the electricity utilities, who were the main focus of our concerns in the last BCMR, all now have plans to migrate and Ofgem is proactively monitoring their progress;
- BT has adopted a much more proactive approach and now has a programme of engagement with its retail customers and industry associations;
- BT has announced that services will now be available until 31 March 2020, subject to the proviso that a major incident, such as an exchange fire, may lead to irrecoverable loss of the affected services; and
- the volume of circuits in use has fallen by over 60 per cent since 2008.

5.19 We also consider that:

- as users can migrate to alternative services and will increasingly do so over the market review period, any barriers to, and the prospects for, the competitive provision of retail VLB circuits are now less relevant;
- As discussed in earlier sections, BT is managing the process of withdrawal;
- Further protection will be provided by *ex ante* regulation of the related upstream wholesale low bandwidth TISBO market, which will remain in place. This will apply to services of 2Mbit/s that can be utilised as replacements for some VLB circuits.

5.20 Given this, and in the context of a legacy market with rapidly declining volumes, it is appropriate to rely on *ex post* competition law rather than imposing *ex ante* regulation. Consequently the three criteria test is no longer satisfied and therefore this market is no longer susceptible to *ex ante* regulation.

The effect of this finding

5.21 Our provisional finding that the VLB TI retail market no longer satisfies the EC's three criteria test means that we no longer consider this retail market a relevant market for the purpose of this market review. The effects of this finding, if confirmed following consultation, would be:

- i) that we will not conduct a formal market definition and SMP assessment for this market; and
 - ii) that we will withdraw the existing SMP regulation imposed under the BCMR 2013 from April 2016 when we conclude our market review.
- 5.22 We set out a draft notice revoking the SMP services conditions at Annex 6 of the May 2015 BCMR Consultation.³²

Question 5.1: Do you agree with our conclusion that the VLB TI retail market no longer satisfies the EC's three criteria test? If not, please explain your view.

³² <http://stakeholders.ofcom.org.uk/consultations/bcmr-2015/>

Section 6

VLB leased lines in the Hull area

- 6.1 The preceding sections of this consultation concern the VLB TI retail market in the UK (excluding the Hull area) in which BT currently holds SMP. In this section, we set out briefly our proposals for regulating VLB leased lines in the Hull area that are provided by KCOM, the operator we provisionally find to have SMP in the relevant retail market beyond 31 March 2016. Our proposals are intended to protect existing end-users, while also allowing KCOM to withdraw VLB leased lines from April 2016.
- 6.2 Our proposed approach to this issue is set out in full in our May 2015 BCMR Consultation at Section 14.³³

KCOM is currently subject to regulatory obligations in respect of VLB leased lines

- 6.3 In the Hull area, VLB leased lines fall within the broader retail market for TI leased lines at bandwidths up to and including 8Mbit/s (known as low bandwidth leased lines). In the BCMR 2013, we found KCOM to have SMP in this retail market, and as a result we imposed certain regulatory obligations to address the competition problems we identified. Table 6.1 summarises the competition problems we identified and the regulatory obligations we imposed to address them.

Table 6.1: Table of existing regulatory obligations in low bandwidth TI retail market in the Hull area

Competition problems	Regulatory obligations
<ul style="list-style-type: none"> Refusal to supply Predatory pricing Margin squeeze Cross subsidisation 	<ul style="list-style-type: none"> Obligation to supply retail services on fair and reasonable terms, conditions and charges.
<ul style="list-style-type: none"> Price discrimination Non price discrimination Excessive pricing Predatory pricing Margin squeeze 	<ul style="list-style-type: none"> Obligation not to discriminate unduly; and Obligation to publish a reference offer.

KCOM's desire to withdraw its retail VLB leased lines

- 6.4 In August 2014, KCOM advised us that it was considering its plans for the withdrawal of retail VLB leased lines for similar reasons as those set out by BT. Under the current regulatory regime, KCOM is prohibited from withdrawing these services, as its current obligation to supply retail services applies to VLB leased lines and requires KCOM to continue to offer both new and existing VLB leased lines throughout the current review period. In light of KCOM's desire to withdraw these services, we have considered whether, and if so how, we should regulate retail VLB leased lines in the Hull area during the next BCMR period.

³³ <http://stakeholders.ofcom.org.uk/consultations/bcmr-2015/>

Regulatory approach in light of withdrawal

- 6.5 In the May 2015 BCMR Consultation, we set out our provisional view that KCOM continues to have SMP in the retail market of low bandwidth TI leased lines. In light of this, and the fact that KCOM is considering its plans for withdrawing VLB leased lines, we propose to alter the regulations we impose on KCOM in this market to allow it to withdraw these VLB leased lines from the start of the next BCMR period. Our proposed approach is to retain the obligation on KCOM to supply retail leased lines, but to:
- i) remove the obligation to supply new VLB leased lines; and
 - ii) add an obligation to give two years' notice to customers before withdrawing existing VLB leased lines.
- 6.6 Our view is that this proposal balances two relevant factors:
- proportionality, in that we should not impose conditions that would artificially extend the life of these legacy services; and
 - that we should ensure that KCOM gives end-users adequate notice, particularly in light of the problems encountered by BT and the possibility that these services are being used by operators of essential services that would not be able to migrate without a lengthy notice period.
- 6.7 In this regard, we consider requiring KCOM to give at least two years' notice achieves a balance that adequately protects existing customers, while also permitting KCOM to end the life of these legacy services. Moreover, we consider that the obligation we propose to impose on KCOM not to discriminate unduly will adequately protect customers that wish to obtain VLB leased lines before KCOM withdraws the supply of new services.
- 6.8 This approach is similar to that taken in the past with BT when it has sought to withdraw its VLB leased lines and also acknowledges the fact that KCOM's plans for service withdrawal are not as far advanced as BT's at this point.

Our concerns over CNI operators

- 6.9 KCOM's volume of VLB leased lines is significantly smaller than that of BT and the small geographic area over which KCOM offers VLB leased lines means the risk of harm to CNI operators is considerably smaller than that posed by BT's withdrawal. However, we have nonetheless engaged with KCOM about its withdrawal, gained assurances that it will communicate openly with its customers about any withdrawal plans once they are formed and, as discussed above, we propose to require KCOM to give at least two years' notice through *ex ante* regulation.
- 6.10 An element of our programme of engagement is to ensure that the CNI community is aware of this consultation document. This will mean that CNI operators will become aware of KCOM's emerging plans and their need to plan accordingly through this publication.

Question 6.1: Do you know of any CNI operators that rely on retail VLB leased lines provided by KCOM? If so, please provide information about the CNI operator and contact information.

Section 7

Wholesale VLB services

- 7.1 The preceding sections of this consultation concern the retail VLB leased lines sold in the UK. In this section, we discuss briefly the related matter of VLB Partial Private Circuits (PPCs), which are the BT wholesale services that other CPs use to create their own retail VLB leased lines. BT plans to also withdraw these wholesale services in the coming years. This makes it equally important that end-users are made aware of this withdrawal and that they plan to migrate onto suitable alternatives.
- 7.2 Our proposed approach to VLB PPCs is set out in full in our May 2015 BCMR Consultation at Section 11.³⁴

VLB PPCs are used by CPs to create retail VLB leased lines

- 7.3 PPCs are wholesale digital services that we require BT to provide, that allow competing CPs to replicate BT's retail products effectively, both technically and commercially. PPCs are sold at numerous bandwidths, including below 2Mbit/s (VLB PPCs). These VLB PPCs enable CPs to replicate BT's retail VLB digital leased lines, although not BT's analogue leased lines.
- 7.4 A more detailed description of PPCs can be found in Annex 16 of the May 2015 BCMR Consultation at paragraphs A16.7 – A16.9.

BT plans to withdraw VLB PPCs in the coming years

- 7.5 Like VLB retail leased lines, VLB PPCs are also carried over the DPCN. BT has announced plans to withdraw these wholesale services. CPs were advised in April 2010³⁵ that these PPCs would be withdrawn from 2018 and this message was reaffirmed in April 2012.³⁶ However, at the PPC Industry Forum meeting on 30 January 2014, BT announced that the withdrawal date would be deferred until at least 2020. The notes of this meeting, which codified this deferral, were issued to attendees and published on the BT Wholesale website.³⁷ The relevant page of the notes can be found at Annex 11.
- 7.6 From the perspective of this market review, VLB PPCs fall in the wholesale market for low bandwidth Traditional Interface Symmetric Broadband Origination (TISBO) services. This market encompasses wholesale services at bandwidths up to and including 8Mbit/s. In the May 2015 BCMR Consultation we have provisionally concluded that, as VLB PPCs are legacy services that are approaching the end of their life, it would be inappropriate for Ofcom to use wholesale regulation to artificially extend the availability of these services. We have therefore proposed to amend our

³⁴ <http://stakeholders.ofcom.org.uk/consultations/bcmr-2015/>

³⁵ BT, *Consult21 briefing: 21CN Deployment Strategy (Plan of record and 21CN product plans)*, 15 April 2010, https://www.btwholesale.com/shared/document/21CN_Consult21/c21_MG_015_DSP_Apr10_Issue10.pdf

³⁶ BT, *PPC Sub-2Mbit/s Strategy Review Briefing*, https://www.btwholesale.com/shared/document/News_and_Insights/Briefings/PPCs/Sub_2Mb_Review_Briefing_Revision_Issue.pdf

³⁷ Unlike other wholesale leased lines products that are sold by Openreach, such as wholesale Alternative Interface Symmetric Broadband Origination products, PPCs are sold by BT Wholesale.

regulation to permit BT to withdraw VLB PPCs upon giving one year's notice. Given BT's obligation not to discriminate unduly, in practice this would allow BT to withdraw VLB PPCs from the date it withdraws retail VLB retail leased lines – currently scheduled for 31 March 2020.

Implications of BT's plans to withdraw VLB PPCs

- 7.7 As VLB PPCs are major components of retail VLB digital leased lines provided by CPs other than BT, the risk we have identified in relation to BT's plans to withdraw retail VLB leased lines applies equally to the withdrawal of VLB PPCs: end-users who are customers of CPs other than BT might only hear of the withdrawal when there is insufficient time to migrate onto alternative services. In the case of CNI operators, this might even lead to a disruption to essential services. In light of this, we have chosen to highlight the withdrawal of VLB PPCs in this document as well as in the May 2015 BCMR Consultation.
- 7.8 Our programme of engagement, set out in Section 4, aims to ensure that CNI operators are aware of BT's plans to withdraw retail VLB leased lines and the timeframe they have to migrate onto other services. This programme will also mitigate against the risk of CNI operators being adversely affected by the withdrawal of VLB PPCs in the following two ways:
- i) This consultation is a mechanism for raising awareness of the withdrawal of retail services among the CNI community and will also highlight to CNI operators the withdrawal of VLB PPCs. We would encourage CNI operators to engage with their service provider about alternative services, if they have not done so already.
 - ii) Our engagement with CPs will include contacting those that purchase VLB PPCs. As well as alerting them to the withdrawal of VLB PPCs, we will also be seeking their assurances that they will give sufficient notice to their customers of the withdrawal of the services and the need to migrate.

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 31 July 2014**.
- A1.2 Ofcom strongly prefers to receive responses using the online web form at <http://stakeholders.ofcom.org.uk/consultations/very-low-bandwidth/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 menachem.grunewald@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.
- Menachem Grunewald
Floor 4
Competition Policy
Riverside House
2A Southwark Bridge Road
London SE1 9HA
- Fax: 020 7981 3282
- 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. You can respond to a sub-set of questions and are under no obligation to respond to all of the questions.

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 Menachem Grunewald on 020 7981 3282.

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/terms-of-use/>

Next steps

- A1.11 Following the end of the consultation period, Ofcom intends to publish a statement in early 2016.
- 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/email-updates/>

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 Graham Howell, Secretary to the Corporation, who is Ofcom's consultation champion:

Graham Howell
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA

Tel: 020 7981 3601

Email Graham.Howell@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 <http://stakeholders.ofcom.org.uk/consultations/consultation-response-coversheet/>.
- 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:

To (Ofcom contact):

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

☐

Name/contact details/job title

☐

Whole response

☐

Organisation

☐

Part of the response

☐

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 3.1: Do you know of other CNI operators that will be affected by the withdrawal of VLB services that we have not considered above? If so, please provide details of these CNI operators, and, if possible, please outline their awareness and preparedness for the withdrawal.

Question 3.2: Are there any other developments since the last BCMR or prospective developments that may be relevant to our review of this market? Please identify specific developments, explaining why they may be relevant.

Question 4.1: Are there industry associations among the CNI community that you consider we need to contact to increase awareness of the withdrawal of these services?

Question 4.2: Do you know of any other category of CNI operator that will be affected by the withdrawal, but that would not become aware of it through our programme of engagement? If so, please provide details of the category of CNI operator and your view on how best to raise awareness with them.

Question 5.1: Do you agree with our conclusion that the VLB TI retail market no longer satisfies the EC's three criteria test? If not, please explain your view.

Question 6.1: Do you know of any CNI operators that rely on retail VLB leased lines provided by KCOM? If so, please provide information about the CNI operator and contact information.

Annex 5

BT notice of withdrawal – January 2010

Briefing



Product Update – BT's TDM Services

1 Introduction

This statement has been written in response to customer enquiries about BT's plans for its retail TDM services.

BT has a well established portfolio of retail Point to Point Time Division Multiplexed (TDM)¹ services and understands that customers have come to rely on the stability and performance characteristics of these products.

However it is also clear that market demand for these services is changing as technologies evolve. Consequently BT has undertaken a commercial review of the product portfolio and their expected demand profile in future years, as well as a technical review of the platforms on which they are delivered. This has enabled us to determine the future roadmap for these services and plan for possible changes to the portfolio such that we can continue to meet customers' current and future needs.

As a result, BT has concluded that where demand levels for these services remain commercially viable, we will continue to support them on existing platforms, unless otherwise stated, until March 2018, at which point they will be fully withdrawn from service. Existing product definitions and performance characteristics will therefore remain largely unchanged. Where practical, BT will withdraw services from new supply approximately two years in advance of full service withdrawal.

Where individual products are expected to reach the end of their commercially sustainable life before March 2018, BT intends to provide at least three years notification of their full withdrawal in recognition of the challenges some customers may experience with planning the migration of their critical applications.

2 Retail Digital Services 2Mb and above (BT MegaStream)

We will continue to support existing MegaStream products nationally, (at and above 2Mb) as long as it is commercially viable to do so, and subject to the availability of the relevant Partial Private Circuits (PPC) until at least March 2018. This does not apply to sales of MegaStream Directly

¹ TDM, in this context, is the generic term for private circuit type services typically running over "traditional" or legacy platforms such as the Digital Private Circuit Network (DPCN) or legacy Synchronous Digital Hierarchy (SDH) platforms, and includes products such as Analogue, KiloStream, KiloStream N and MegaStream private circuits.

Cabled, MegaStream 8 and MegaStream 622 services which have been withdrawn from new supply.

3 Retail Sub 2Mb Digital Services (BT KiloStream and KiloStream N)

We will continue to support existing currently available KiloStream and KiloStream N products (including current aggregated bearer variants) nationally, (at and above 64Kb) as long as it is commercially viable to do so, and subject to the availability of the relevant Partial Private Circuit products (PPCs) until March 2018. Services will continue to be provided on the existing access and transmission platforms therefore minimising service disruption, performance uncertainty and reactive migration planning. This timeframe however, does not apply to sales of KiloStream products such as KiloStream Assured Restore, already withdrawn from new supply.

BT is not currently planning to develop directly equivalent 21CN replacement services to replace sub 2Mb digital private circuits.

4 National Analogue Services

We will continue to support existing analogue point to point products nationally, as long as it is commercially viable to do so, and subject to the availability of the relevant BT copper access circuits where required, until March 2018. This means active (or amplified) products such as analogue standard {EPS 1 & 21}, analogue premier {EPS 25B} and analogue network {EPS 3N} product variants. Power feeding and line isolation facilities will also continue to be available for these services where required. These services will continue to be provided on the existing access and transmission platforms, therefore minimising service disruption, performance uncertainty and reactive migration planning. However it should be noted this timeframe does not apply to sales of Multipoint, Omnibus or other multi-terminal services, DealerStream and analogue products already withdrawn from new supply.

BT is not currently planning to develop directly equivalent 21CN replacement services to replace analogue private circuits.

5 Own Exchange Analogue Services

These services do not rely on inter-exchange transmission networks. We will continue to support Analogue Private Circuits that have both ends served from the same local exchange (own exchange circuits), as long as it is commercially viable to do so and where local BT copper access is available until at least March 2018. This includes both baseband services (indirectly wired EPS 8 & 9 services) and active (or amplified) products (analogue standard {EPS 1 & 21}, analogue premier {EPS 25B} and analogue network {EPS 3N} products). BT will also continue to provide power feed and line isolation facilities on these services where required.

6 Other BT Private Circuit Services

Only specific products detailed above should be considered within scope of this update. All other current private circuit products including DealerStream, Prime & OA product variants, Analogue Multipoint, Analogue Omnibus, CircuitSure, CitySure and MegaStream 1 products will be the subject of additional future updates as the roadmaps of these products are refined.

If you have any questions about this product update please contact your BT Account Manager.

Annex 6

BT notice of withdrawal – November 2011



Briefing

Product Update (Nov 2011) – BT's TDM Services

1 Introduction

This statement has been written in response to customer enquiries about BT's plans for its retail TDM services, and supersedes the previous update published in January 2010.

BT has a well established portfolio of retail Point to Point Time Division Multiplexed (TDM)¹ services and understands that customers have come to rely on the stability and performance characteristics of these products.

However it is also clear that market demand for these services is changing as technologies evolve. Consequently BT has undertaken a commercial review of the product portfolio and their expected demand profile in future years, as well as a technical review of the platforms on which they are delivered. This has enabled us to determine the future roadmap for these services and plan for possible changes to the portfolio such that we can continue to meet customers' current and future needs.

As a result, BT has concluded that where demand levels for these products remain commercially viable, we will continue to support them on existing platforms until the end of March 2018, at which point they, unless otherwise stated in the product specific sections below, will be fully withdrawn from service. Existing product definitions and performance characteristics will therefore remain largely unchanged. Where practical, BT will withdraw products from new supply approximately two years in advance of full service withdrawal.

Where individual products are expected to reach the end of their commercially sustainable life before March 2018, BT intends to provide at least three years notification of their full withdrawal in recognition of the challenges some customers may experience with planning the migration of their critical applications.

¹ TDM, in this context, is the generic term for private circuit type services typically running over "traditional" or legacy platforms such as the Digital Private Circuit Network (DPCN) or legacy Synchronous Digital Hierarchy (SDH) platforms, and includes products such as Analogue, KiloStream, KiloStream N and MegaStream private circuits.

2 Retail Digital Services 1Mb and above (BT MegaStream)

We intend to withdraw the MegaStream 1Mb product, and any associated commercial variants from new supply (known as the stop sell new or SSN date) during, or shortly after November 2012.

This means it will no longer be possible to order new MegaStream 1 circuits or re-site existing services after this date. BT will, however, continue to maintain any existing circuits after this date until this product is fully withdrawn from service. We currently expect this to be approximately, but no less than, two years after the date it is withdrawn from new supply (i.e. around but no earlier than November 2014). Any new supply orders in the course of provision on the SSN date will be allowed to continue to completion of the order.

We will continue to support all other existing MegaStream products nationally, (at and above 2Mb) as long as it is commercially viable to do so, and subject to the availability of the relevant Partial Private Circuits (PPC) until at least March 2018, i.e. there is currently no planned withdrawal date for these services. This does not apply to sales of MegaStream Directly Cabled, MegaStream 8 and MegaStream 622 services which have been withdrawn from new supply.

3 Retail Sub 2Mb Digital Services (BT KiloStream and KiloStream N)

We intend to withdraw the following products, and any associated commercial variants from new supply (known as the stop sell new or SSN date) during, or shortly after November 2012.

- All KiloStream products at speeds below 48Kb (i.e. 2.4Kb, 4.8Kb, 9.6Kb and 19.6Kb) thus removing the X.21bis (V.24) interface option from the KiloStream portfolio
- All KiloStream N speeds except 128Kb, 256Kb and 512Kb (i.e. 192Kb, 320Kb, 384Kb, 448Kb, 576Kb, 640Kb, 704Kb, 768Kb, 832Kb, 896Kb, 960Kb and 1024Kb)

This means it will no longer be possible to order new circuits or re-site existing services of these types after this date. BT will, however, continue to maintain any existing circuits after this date until these products are fully withdrawn from service. We currently expect this to be approximately, but no less than, two years after the date they are withdrawn from new supply (i.e. around but no earlier than November 2014). Any new supply orders in the course of provision on the SSN date will be allowed to continue to completion of the order.

We will continue to support all other existing and currently available KiloStream and KiloStream N products (including current aggregated bearer variants) nationally, (at and above 64Kb) as long as it is commercially viable to do so, and subject to the availability of the relevant Partial Private Circuit products (PPCs) until March 2018. Services will continue to be provided on the existing access and transmission platforms therefore minimising service disruption, performance uncertainty and reactive migration planning. This timeframe however, does not apply to sales of KiloStream products such as KiloStream Assured Restore and DealerStream 7-10 already withdrawn from new supply.

BT is not currently planning to develop directly equivalent 21CN replacement services to replace sub 2Mb digital private circuits.

4 National Analogue Services

We will continue to support existing analogue point to point products nationally, as long as it is commercially viable to do so, and subject to the availability of the relevant BT copper access circuits where required, until March 2018. This means active (or amplified) products such as analogue standard {EPS 1 & 21}, analogue premier {EPS 25B} and analogue network {EPS 3N} product variants. Power feeding and line isolation facilities will also continue to be available for these services where required. These services will continue to be provided on the existing access and transmission platforms, therefore minimising service disruption, performance uncertainty and reactive migration planning. However it should be noted this timeframe does not apply to sales of Multipoint, Omnibus or other multi-terminal services, DealerStream and analogue products already withdrawn from new supply.

BT is not currently planning to develop directly equivalent 21CN replacement services to replace analogue private circuits.

5 Own Exchange Analogue Services

These services do not rely on inter-exchange transmission networks. We will continue to support Analogue Private Circuits that have both ends served from the same local exchange (own exchange circuits), as long as it is commercially viable to do so and where local BT copper access is available until at least March 2018. This includes both baseband services (indirectly wired EPS 8 & 9 services) and active (or amplified) products (analogue standard {EPS 1 & 21}, analogue premier {EPS 25B} and analogue network {EPS 3N} products). BT will also continue to provide power feed and line isolation facilities on these services where required.

6 Other BT Private Circuit Services

BT will close CitySure and CircuitSure business continuity products to new customers (i.e. customers without existing CitySure or CircuitSure product instances) from November 2012. Existing customers of these services will be unaffected, and will be able to continue to reconfigure their business continuity requirements as required.

Only specific products detailed in this document should be considered within scope of this update. All other current private circuit products including DealerStream, Prime & OA product variants, Analogue Multipoint and Analogue Omnibus products will be the subject of additional future updates as the roadmaps of these products are refined.

If you have any questions about this product update please contact your BT Account Manager.

Annex 7

BT notice of withdrawal – November 2012

Briefing



Product Update (Nov 2012) – BT's TDM Services

1 Introduction

This statement has been written in response to customer enquiries about BT's plans for its retail TDM services, and supersedes the previous update published in November 2011.

BT has a well established portfolio of retail Point to Point Time Division Multiplexed (TDM)¹ services and understands that customers have come to rely on the stability and performance characteristics of these products.

However it is also clear that market demand for these services is changing as technologies evolve. Consequently BT has undertaken a commercial review of the product portfolio and their expected demand profile in future years, as well as a technical review of the platforms on which they are delivered. This has enabled us to determine the future roadmap for these services and plan for possible changes to the portfolio such that we can continue to meet customers' current and future needs.

As a result, BT has concluded that where demand levels for these products remain commercially viable, we will continue to support them on existing platforms until the end of March 2018, at which point they, unless otherwise stated in the product specific sections below, will be fully withdrawn from service. Existing product definitions and performance characteristics will therefore remain largely unchanged. Where practical, BT will withdraw products from new supply approximately two years in advance of full service withdrawal.

Where individual products are expected to reach the end of their commercially sustainable life before March 2018, BT intends to provide at least three years notification of their full withdrawal in recognition of the challenges some customers may experience with planning the migration of their critical applications.

¹ TDM, in this context, is the generic term for private circuit type services typically running over "traditional" or legacy platforms such as the Digital Private Circuit Network (DPCN) or legacy Synchronous Digital Hierarchy (SDH) platforms, and includes products such as Analogue, KiloStream, KiloStream N and MegaStream private circuits.

2 Retail Digital Services 1Mb and above (BT MegaStream)

BT has now withdrawn the MegaStream 1Mb product, and any associated commercial variants from new supply, also known as stop sell new (or SSN).

This means it's no longer possible to order new MegaStream 1 circuits or re-site existing services. BT will, however, continue to maintain any existing circuits until this product is fully withdrawn from service. We currently expect this full withdrawal to be approximately, but no less than, two years after its SSN date (3rd December 2012) - i.e. around, but no earlier than, December 2014. Any new supply orders in the course of provision on the SSN date will be allowed to continue to completion of the order.

We will continue to support all other existing MegaStream products nationally, (at and above 2Mb) as long as it is commercially viable to do so, and subject to the availability of the relevant Partial Private Circuits (PPC) until at least March 2018, i.e. there is currently no planned withdrawal date for these services.

In addition to MegaStream 1 the following MegaStream products have previously been withdrawn from new supply.

MegaStream Directly Cabled, MegaStream 8 and MegaStream 622.

3 Retail Sub 2Mb Digital Services (BT KiloStream and KiloStream N)

BT has now withdrawn the following products, and any associated commercial variants from new supply, also known as stop sell new (or SSN).

- All KiloStream products at speeds below 48Kb (i.e. 2.4Kb, 4.8Kb, 9.6Kb and 19.6Kb) thus removing the X.21 *bis* (V.24) interface option from the KiloStream portfolio
- All KiloStream N speeds except 128Kb, 256Kb and 512Kb (i.e. 192Kb, 320Kb, 384Kb, 448Kb, 576Kb, 640Kb, 704Kb, 768Kb, 832Kb, 896Kb, 960Kb and 1024Kb)

This means it's no longer possible to order new circuits or re-site existing services of these types. BT will, however, continue to maintain any existing circuits until these products are fully withdrawn from service. We currently expect this full withdrawal to be approximately, but no less than, two years after its SSN date (3rd December 2012) - i.e. around, but no earlier than, December 2014. Any new supply orders in the course of provision on the SSN date will be allowed to continue to completion of the order.

We will continue to support all other existing and currently available KiloStream and KiloStream N products (including current aggregated bearer variants) nationally, (at and above 64Kb) as long as it is commercially viable to do so, and subject to the availability of the relevant Partial Private Circuit products (PPCs) until March 2018. Services will continue to be provided on the existing access and transmission platforms therefore minimising service disruption, performance uncertainty and reactive migration planning.

In addition to the services listed above the following KiloStream products have previously been withdrawn from new supply.

KiloStream Assured Restore, KiloStream Plus and DealerStream 7-10

BT is not currently planning to develop directly equivalent 21CN replacement services to replace sub 2Mb digital private circuits.

4 National Analogue Services

We will continue to support existing analogue point to point products nationally (i.e. circuits with inter-exchange main links), as long as it is commercially viable to do so, and subject to the availability of the relevant BT copper access circuits where required, until March 2018. This means active (or amplified) products such as analogue standard {EPS 1 & 21}, analogue premier {EPS 25B} and analogue network {EPS 3N} product variants. Power feeding and line isolation facilities will also continue to be available for these services where required. These services will continue to be provided on the existing access and transmission platforms, therefore minimising service disruption, performance uncertainty and reactive migration planning. However it should be noted this timeframe does not apply to any analogue products already withdrawn from new supply.

Although no stop sell new or final withdrawal dates have been set for sales of DealerStream (1-6) Multipoint, Omnibus or other multi-terminal services it should be recognised many installations of these services also rely on the same national network as those analogue products listed above. We therefore expect likely SSN and full withdrawal dates for these DealerStream and multi-terminal services to broadly align with those for other national analogue services described in this section.

BT is not currently planning to develop directly equivalent 21CN replacement services to replace analogue private circuits.

5 Own Exchange Analogue Services

These services do not rely on inter-exchange transmission networks. We will continue to support Analogue Private Circuits that have both ends served from the same local exchange (own exchange circuits), as long as it is commercially viable to do so and where local BT copper access is available until at least March 2018. This includes both baseband services (indirectly wired EPS 8 & 9 services) and active (or amplified) products (analogue standard {EPS 1 & 21}, analogue premier {EPS 25B} and analogue network {EPS 3N} products). BT will also continue to provide power feed and line isolation facilities on these services where required.

6 Other BT Private Circuit Services

As of 3rd December BT closed CitySure and CircuitSure business continuity products to new customers. Existing customers of these services will be unaffected, and will be able to continue to reconfigure their business continuity requirements as required for as long as they continuously maintain at least one instance of either service from 3rd December 2012 onwards. Although no stop sell new or final withdrawal dates have been set for sales of CitySure and CircuitSure to existing customers it should be recognised these services offer disaster recovery backup to many services that will be fully withdrawn in March 2018. We therefore expect likely SSN and full

withdrawal dates for CitySure and CircuitSure services to broadly align with the normal point to point services protected by them.

Only specific products detailed in this document should be considered within scope of this update. All other current private circuit products and products referenced without specific dates including DealerStream, Prime, Analogue Multipoint and Analogue Omnibus products will be the subject of additional future updates as the roadmaps of these products are refined.

If you have any questions about this product update please contact your BT Account Manager.

Annex 8

BT's voluntary commitment on pricing



Marina Gibbs
Competition Policy Director
Competition Group
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA

28th April 2015

By email only

Dear Marina,

Business Connectivity Market Review 2016 – very low bandwidth retail TI leased lines

I write further to our recent discussions with Keith Hatfield and Menachem Grunewald in relation to sub 2 Mbit/s analogue and digital retail leased lines (“very low bandwidth retail TI leased lines”) and the treatment of them in the forthcoming Business Connectivity Market Review.

These services have been in decline for many years and are now scheduled to be fully withdrawn from service on March 31st 2020. We have already published a stop sell new notice effective September 1st 2016¹ and after this date it will not be possible to order new services or to request changes to existing services.

We understand from our discussions to date that you do not believe continued SMP regulation of these services will be effective or necessary under BCMR 2016 and we would support such a finding. As stated in our discussions and in our letter from Sean Williams to Jonathan Oxley we believe these services should be de-regulated and that Ofcom can be confident that this would not cause significant detriment to consumers.

However given the nature of these services we understand you are concerned that remaining consumers of these services could suffer if prices rose unreasonably or support was withdrawn suddenly during the period of the next market review.

In recognition of this I can confirm that if Ofcom were minded, at the conclusion of BCMR 2016, not to regulate the very low bandwidth retail TI leased lines market, BT would be willing to offer the following commitments:

- Pricing: in any one year, prices for the services would not be increased by more than RPI+8%. Our pricing commitment reflects the expectation that costs will increase as the network platform that supports the services reaches the end phase of its life and

¹ <http://www.bt.com/pricing/notifs/01-08-2014/index.htm>

as volumes on the platform decline there will be fewer connections to recover network platform costs from. It also allows for annual price increases to motivate consumers to migrate to modern alternatives.

- Support for existing very low bandwidth retail TI leased lines: BT has recently revised its plans for the full withdrawal of these services and has published a full update² setting out its plans. On the basis of this update BT now intends to support almost all of the services to March 31st 2020. This extension to the previous closure date of March 31st 2018 gives consumers a further two years to migrate to modern alternatives.

This offer of commitments is made in good faith based on our current assessment of the viability and costs of the network platform which supports the services. We would reserve the right to vary or terminate them on a minimum of one (1) years' notice in the event that circumstances change materially.

I am sure you will appreciate that this offer of commitments is made without sight of Ofcom's proposals in the BCMR 2016 consultation and without prejudice to BT's right to make such representations as we consider appropriate in response to the consultation in due course.

If you have any queries, or would like to discuss this matter further, please do not hesitate to contact me.

Yours sincerely

Alex Tomb

BT Global Services Director of Regulatory Affairs

² BT will provide the link to the TDM Product Update when published. Ofcom have seen the content.

Alex Tomb

BT Global Services Director of Regulatory Affairs

BT Group

BT Centre, 81 Newgate Street
London EC1A 7AJ

tel +44 (0)20 7778 4070

mob +44 (0)7703 108610

email alex.tomb@bt.com

Annex 9

Template letter to sector regulators

Dear...

BT's forthcoming withdrawal of very low bandwidth leased lines services

I am writing to you about a potential concern in relation to the use of very low bandwidth leased lines by [users in your sector] and to secure your support in dealing with this matter.

We understand that [users in your sector] rely on very low bandwidth leased lines for many purposes. BT's current plan is to withdraw these services in March 2018, and it is therefore essential that every affected [user] is aware of the withdrawal and ensures it has firm plans to migrate onto alternative services.

We would like to engage with your organisation so that we can work together to mitigate any risks that could arise as a result of the planned withdrawal of these services. I would therefore appreciate it if you could provide me with a contact with whom we can begin this engagement.

Yours sincerely,

Steve Unger

Annex 10

List of CPs and generic template letter

Generic template letter

Dear [...]

Very low bandwidth leased lines

I am writing to you to emphasise the importance of your role in ensuring that BT's withdrawal of its very low bandwidth (VLB) services causes no disruption to critical national infrastructure (CNI) in the UK, and to secure your assurances that you will do what is necessary in this regard in relation to your customers.

By way of background, in the course of undertaking our Business Connectivity Market Review (BCMR), BT has informed us that it intends to withdraw its very low bandwidth traditional interface retail and wholesale services. The retail services are analogue circuits and digital leased lines offering speeds of less than 2Mbit/s, sold by BT under the product names "Analogue Private Circuits" and "KiloStream". The wholesale services are Partial Private Circuits at bandwidth of less than 2Mbit/s (VLB PPCs).

BT's withdrawal of these services is in three stages:

- stop selling new retail services on 1 September next year;
- withdraw existing retail services on 31 March 2020; and
- withdraw VLB PPCs in 2020.

BT has advised us that the withdrawal date for existing retail services is a switch-off date, after which users will be advised not to rely on these services.

BT cites two main reasons for the planned withdrawal. Firstly, the majority of its customers have moved to modern leased line technology such as Ethernet. Secondly, the platform that delivers these legacy services is over 30 years old and well beyond its original design lifetime. As such, BT judges it is becoming increasingly difficult and expensive to maintain.

Our principal concern is relation to the withdrawal of these services is in relation to organisations responsible for CNI (CNI operators), of which we know that many use these services for vital applications. Our concern is that CNI operators will be unaware of the withdrawal until it is too late for them to migrate onto other technologies, potentially disrupting CNI. This concern is borne out of the fact that CNI operators often have quite complex arrangements, and migration plans therefore need considerable time to be planned and executed. In addition, many CNI operators we have identified are public authorities. This adds an additional challenge for them of needing to secure the necessary funding for what can often be an expensive change programme.

We understand from BT that [company name] is a [reseller of retail analogue circuits **and/or** retail VLB digital leased lines, **and/or** a purchaser of wholesale VLB PPCs]. I am sure

therefore that you will understand that the consequence of this is that BT's withdrawal encompasses services you are selling, but that BT is unaware of the end-users of the services you sell.

We have recently published a consultation on the VLB TI retail market, in which we explain that in order to mitigate the risks to CNI posed by this withdrawal we have launched an extensive programme of engagement aimed at increasing awareness of the withdrawal among the CNI community. As part of this programme we have engaged the other sector regulators, who will be launching initiatives to increase awareness in their sectors, Government departments and many industry associations. Our consultation can be found on our website at the link below:

<http://stakeholders.ofcom.org.uk/consultations/very-low-bandwidth/>

We also wish to secure your support in this endeavour. As only you know who your customers are, you have the important role of informing them of the impact of the withdrawal on them and emphasising the importance of putting migration plans in place in good time. Our concern is that some of your customers may be unaware that they use BT services and, in spite of our programme of engagement and hearing of the withdrawal, might not appreciate its impact on them. This makes your role vital in mitigating the risk to the UK and its citizens.

I seek your assurances that you will engage with your customers of very low bandwidth leased lines immediately and help us ensure that the risks we have identified are avoided. If you have any concerns about engaging with your customers, you can contact Menachem Grunewald at Menachem.Grunewald@Ofcom.org.uk.

Yours sincerely,

Marina Gibbs

List of CPs

A10.1 The generic template letter copied above was sent to the following CPs and service providers:

- 2 Circles Communications;
- 5G Communications Ltd;
- Airwave Solutions Ltd;
- AT&T;
- Azzurri Communications Ltd;
- Belgacom UK Ltd;

- Bowtie Television Ltd;
- BSkyB;
- BT Managed Services Ltd;
- Cairn Systems Ltd;
- Caprock Communications;
- Central Networks & Technologies Ltd;
- Charterhouse Voice & Data;
- Chartwell Telecom;
- City Of London Communications;
- Class System Ltd;
- Colt Technology Services;
- Commsworld Ltd;
- Consolidated Telecommunications Ltd;
- Convergence (Group Networks) Ltd;
- Daisy Communications Ltd;
- Damovo UK Ltd;
- Direct Response Ltd;
- Easynet Ltd;
- Eckoh Ltd;
- Eclipse Telecom Networks Ltd;
- Edge Telecom Ltd;
- Eircom;
- Elitetele.com plc;
- Everything Everywhere;
- Executive Telecommunications (UK) Ltd;
- Gema Tech (UK) Ltd;
- Global Crossing (Bidco) Ltd;

- Highland Network Ltd;
- Highspeed Office;
- Hutchison Whampoa (UK) Ltd;
- ICM;
- Immervox Ltd;
- Inmarsat;
- Intechnology plc;
- Internet Solutions Ltd;
- IPC Network Services;
- KDDI Europe Limited;
- Keycom plc;
- KCOM Group plc;
- Lister Communications Ltd;
- Logicalis Ltd;
- MDNX Enterprise Services Ltd;
- NTT Europe;
- O-Bit Telecom;
- Page One Communications;
- Pinnacle Telecommunications plc;
- Redstone plc;
- Scottish & Southern Energy;
- Six Degrees Technology Group Ltd;
- South West Telecom Ltd;
- Sprint Communications;
- Stream Networks Ltd;
- Synetrix Ltd;
- Synetrix (Holdings) Ltd;

- Technology Telecom;
- TDC;
- Telefonica;
- Telstra Europe Ltd;
- TMI Telemedia Ltd;
- TNS UK Ltd;
- T-Systems;
- Verizon UK;
- Virgin Media;
- Vodafone;
- Vodat International Ltd; and
- Zayo Group UK Ltd.

Annex 11

Notes of PPC Industry Forum meeting on 30 January 2014

PPC Industry Forum
30 January 2014
 Forum Notes

	Dave Jackson (O2) asked for clarity on what fault comes back and how is this communicated when there are 2 eChat on a circuit with a repeat fault. He also asked if there are stats showing the number of eChat raised.		
Actions from 21 March 2013			
01/03	<p>Sub-2Mbit/s migration Options: CPs are asked to provide some feedback regarding the option of moving sub-2Mbit/s to Ethernet; Broadband or would you rather they are upgraded to 2Mbit/s. Respond by End April 2013 would be appreciated.</p> <p><u>26 June 2013</u> <i>CPs yet to respond responded. Ongoing</i></p> <p><u>31 October 2013</u> This action is ongoing as CPs asked for more information and contact via bi-lateral to understand alternative to the sub-2Mbit/s products being withdrawn 31 March 2013. CPs to engage with BTW.</p> <p><u>30 January 2014</u> CPs informed the withdrawal date now extended from 31 March 2018 to the earliest 2020.</p>	CPs	Ongoing
Actions from 26 June 2013			
01/06	<p>Validation Rules: Nathan Evans asks that the following areas of concern re the PPC Validation rules are discussed:</p> <ol style="list-style-type: none"> 1. Passing on of TSVAL information to CPs 2. Validation of faults not hard down. 3. Deduction of time spent on 1st day of a fault where the fault repair of the fault moves over to the following day. <p>BTW to set up a separate conference call to discuss the above with CPs</p> <p><u>31 October 2013</u> Vodafone and O2 to collaborate to agree how to progress this requirement with BT.</p> <p><u>30 January 2014</u> Nathan Evans, Mark Ruben-Fisher (Vodafone) and Dave Jackson (O2) raised concerns regarding the transparency on the application of the rules and also the validity of the rules. Their views are with the advance in technology are these rules still valid. They also expressed concerns regarding the backlog in circuit validation over the summer and request an update before next forum of action plan to prevent a similar occurrence.</p>	Voda O2	Ongoing
02/06	<p>PPC Pricing Tool move to BT Wholesale website Alan Thomas requests BT set up a webinar following the pricing tool's move to BT Wholesale website, to provide users with guidance on accessing the tool via the btwholesale.com website</p>	BTW	Ongoing