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# Promoting competition and investment in fibre networks: Wholesale Fixed Telecoms Market Review 2021-26

Volume 3: Non-pricing remedies

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Non-confidential version – redacted for publication [X]



**STATEMENT:**

Publication date: 18 March 2021

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# 1. Approach to remedies

- 1.1 This section sets out our approach to remedies. These are the remedies that we have decided to impose on Openreach<sup>1</sup> in order to address BT's SMP in each relevant wholesale fixed telecoms market in the UK (excluding the Hull Area). As set out in our market analysis (Volume 2), the markets where we have found BT to have SMP are:
- the physical infrastructure market in the UK;
  - the Wholesale Local Access (WLA) markets in each of Area 2 and Area 3;
  - the Leased Lines Access (LL Access) markets in each of Area 2, Area 3 and the High Network Reach (HNR) Area; and
  - the Inter-Exchange Connectivity (IEC) markets at BT Only and BT+1 exchanges.
- 1.2 Our approach to remedies takes into account stakeholders' comments in response to our consultations. The detail of our non-pricing remedies is set out in Sections 2 to 7 of this volume; our pricing remedies, including charge controls, in Volume 4; our specific quality of service remedies in Volume 5 and our regulatory reporting remedies in Volume 6.

## Covid-19 pandemic

- 1.3 As many of our stakeholders have noted, the Covid-19 pandemic has put significant pressure on the UK economy, including the telecoms industry, through various negative effects, such as disrupted supply chains and limited access to premises. At the same time, the pandemic has changed our daily life, including our increased dependence on reliable broadband for work and education.
- 1.4 This clearly illustrates the importance of investment in gigabit-capable networks, which typically offer both broadband and leased lines services. We believe that our approach to remedies remains appropriate, in particular our objective to promote competition and investment in gigabit-capable networks by Openreach and other network operators, while seeking to protect consumers and existing models of downstream competition.
- 1.5 Notwithstanding the pandemic, telecoms providers are continuing to deploy new networks. The pandemic may lead to some temporary impacts on Openreach's ability to meet quality of service standards which we have reflected in our quality of service regulation for the first year of the review period, set out in Volume 5 Section 3.

## Competition concerns

- 1.6 BT's SMP in the physical infrastructure, WLA, LL Access and IEC markets, gives rise to a number of competition concerns, as set out in our market analysis (Volume 2 Sections 5

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<sup>1</sup> As explained in Volume 2, we find BT to have SMP in the physical infrastructure, WLA, LL Access and IEC markets. To address this SMP we impose remedies on BT. We refer to Openreach in this volume reflecting that BT's Openreach division, run by Openreach Limited, is responsible for providing regulated services over the copper and fibre connections between BT's exchanges to homes and businesses.

and 8). In summary, we consider that, absent regulation, Openreach has the ability and incentive to engage in various forms of exclusionary and/or exploitative conduct that could distort competition and/or harm consumers, including:

- Openreach may not invest in new networks or may do so more slowly than would occur in a competitive market. This concern is addressed by our overall package of remedies seeking to incentivise network competition and investment in gigabit-capable networks.
- Openreach could refuse to supply access and thus restrict competition in the provision of products and services in the relevant downstream markets. This concern is addressed in particular by our general network access remedy (Section 3) and our specific network access remedies (Sections 4 to 6).
- Openreach could set excessive wholesale charges or, in combination with downstream prices, engage in a price squeeze (also referred to as margin squeeze). These concerns are addressed in particular by our specific pricing remedies (Volume 4), and by our general network access remedy which requires that charges (in the absence of a charge control or basis of charges obligation) are fair and reasonable (Section 3).
- Openreach could favour BT's downstream businesses to the detriment of its competitors in the relevant wholesale and retail markets, by both price and non-price discrimination. This concern is addressed in particular by our general non-discrimination remedies (Section 3).
- Openreach could target price reductions or adopt other commercial terms in order to deter the rollout of new networks by competitors. This concern is addressed in particular by our regulation of geographic discounts and other commercial terms (Section 7).
- Openreach may not have sufficient incentive to maintain an adequate level of service quality in the provision and repair of wholesale services, or may discriminate in the quality of provision. This concern is addressed in particular by our quality of service remedies (Volume 5).

## Approach to remedies

- 1.7 As set out in Volume 1, our strategy, taking into account our legal duties, is to promote investment in gigabit-capable networks by Openreach and other telecoms providers in order to promote network-based competition. We want to encourage BT's competitors to build their own networks, rather than relying on network access from Openreach. In areas of the UK where there is unlikely to be material and sustainable competition to BT in the commercial deployment of competing networks, we want to promote investment by Openreach.
- 1.8 Our general regulatory approach is to apply remedies as far upstream as possible to ensure that as much of the value chain as possible is open to competition. In view of our legal duties and broader strategy (Volume 1), and our market analysis and competition concerns (Volume 2), our overarching remedy is to maintain access to BT's ducts and poles in all areas of the UK (excluding the Hull Area). We consider that this remedy is most

appropriate in incentivising competitive investment in gigabit-capable networks, as it reduces the cost and increases the speed of network rollout by competitors.

- 1.9 The remedies we impose in downstream markets also promote competition and investment in gigabit-capable networks. In all areas, we prevent Openreach from using wholesale pricing structures to deter new network build by competing network operators by prohibiting certain geographic discounts and providing transparency of other commercial terms that may distort competition. We also provide a path for shifting the focus of regulation from Openreach's copper to full-fibre network, supporting a progressive transition. We discuss these remedies in more detail below.
- 1.10 We recognise that network competition will not develop uniformly across the UK. Therefore, we have decided to adopt a regulatory approach to remedies that reflects how network competition develops in the different product and geographic markets we have identified. Specifically, for markets downstream of physical infrastructure, we differentiate between places where material and sustainable network competition is viable, and places where such competition is unlikely to emerge, as discussed in more detail below.

### **Approach in areas where there is potential for material and sustainable network competition (Area 2)**

- 1.11 In these areas our objective is to promote competition and investment in gigabit-capable networks by Openreach and other telecoms providers. The resulting network competition will provide increasing protection for consumers in the long term, and in many areas effective competition may emerge such that the need for regulation falls away. This will take time and therefore we seek to protect consumers and existing models of downstream competition in the short term.
- 1.12 Accordingly, our approach is to maintain access to Openreach's existing wholesale broadband and leased lines services. In setting prices and other regulatory conditions, we have exercised our discretion in favour of an approach that promotes competition and investment in gigabit-capable networks, and protects consumers and existing models of downstream competition in the short term.
- 1.13 Virgin Media is already present in most of Area 2, and it plans to both extend its coverage in Area 2 and upgrade its network to gigabit-capable over the next few years. Therefore, in addition to planned network build in Area 2, we already have an existing material and sustainable competitor present in many parts of Area 2, and we believe that it is right that our remedies reflect this.

### **Approach in areas where material and sustainable network competition is unlikely (Area 3)**

- 1.14 In these areas our objective is to promote investment in gigabit-capable networks by Openreach. We also seek to promote competition based on access to Openreach's networks and protect consumers.

- 1.15 Accordingly, our approach is to set appropriate investment incentives for Openreach. We consider that a Regulatory Asset Base (RAB) approach could incentivise Openreach to invest in a fibre network in Area 3 since it provides more certainty of cost recovery. This is because the costs of the fibre investment can be recovered across a wider range of services, including the existing regulated copper services.
- 1.16 In June 2020, Openreach committed to build fibre commercially (i.e. without public subsidy) to at least 3.2 million premises in Area 3 by the end of this review period.<sup>2</sup> We set prices and other regulatory conditions for the existing regulated broadband services that are consistent with this commitment and allow Openreach the opportunity to recover its efficiently incurred costs.
- 1.17 Finally, we maintain access to Openreach's existing wholesale broadband and leased lines services and introduce a dark fibre LL Access remedy, to promote competition based on access to Openreach's networks. We then set prices and other regulatory conditions for the regulated access services such that consumers are protected.

## Our package of remedies

- 1.18 In each of these relevant markets we have imposed a general network access obligation supplemented by transparency, non-discrimination and financial reporting requirements, plus charge controls and quality of service requirements where appropriate. We also require a number of specific network access remedies, which require Openreach to provide particular forms of network access in each product market.

## Physical infrastructure market

- 1.19 In our market analysis (Volume 2), we have identified that BT has SMP in the supply of physical infrastructure in the UK outside the Hull Area. As set out above, we consider access to physical infrastructure to be our overarching remedy for the support of network competition in all areas.
- 1.20 Accordingly, we continue to require Openreach to provide wholesale access to BT's duct and poles together with a cost-based charge control to allow Openreach to recover its costs.

## WLA and LL Access markets

- 1.21 In our market analysis (Volume 2), for the WLA and LL Access markets, we have identified geographic markets in which the conditions of competition are different.
- 1.22 While we have identified separate markets for WLA and LL Access, we consider that it is appropriate at times to consider our approach to remedies across product markets. This is because we have observed an increasing trend towards investment in networks that

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<sup>2</sup> [Letter from Openreach to Ofcom, 26 June 2020](#) and [further letter from Openreach to Ofcom dated 8 March 2021](#).

service both markets, and for competition in one market to provide new opportunities for competition in the other. Accordingly, our approach in the WLA and LL Access markets reflects differing competitive conditions as follows:

- **Area 2:** the WLA Area 2 market and the LL Access Area 2 market, where there is, or there is likely to be potential for, material and sustainable competition to BT in the commercial deployment of competing networks;
- **Area 3:** the WLA Area 3 market and the LL Access Area 3 market where there is not, and there is unlikely to be potential for, material and sustainable competition to BT in the commercial deployment of competing networks; and
- **LL Access HNR Area**, where there is significantly more leased lines network competition than elsewhere, but BT still has SMP.

## Area 2

1.23 In Area 2, we maintain the existing WLA and LL Access network access obligations on Openreach. In the WLA market, we focus our charge controls only on the provision of the FTTC 40/10 product (where there is no FTTP) with no charge control on higher speed services. In the LL Access market, we charge control all fibre leased lines. However, in order to promote investment in competing networks we are not requiring Openreach to supply dark fibre.

1.24 We have decided to hold price caps for the relevant WLA and LL Access services constant in real terms (CPI-0%). This incentivises investment by Openreach and altnets, while allowing Openreach to recover its costs. Our approach to pricing also protects consumers over this review period and provides adequate protection to telecoms providers reliant on Openreach while competition continues to develop.

1.25 Finally, given the potential incentive on Openreach to seek to stifle the emergence of new competitors, we prohibit geographic price discounting in these areas for wholesale broadband and leased lines rental charges. We are also alive to the risk that other loyalty-inducing commercial terms could have an impact on the emergence of new competitors. Openreach is required to notify certain proposed commercial terms for analysis and, where necessary, we will intervene under our SMP conditions.

## Area 3

1.26 In Area 3, we maintain the existing WLA network access obligations on Openreach. In light of Openreach's commitment for network build in these areas, we have adopted a forecast Regulatory Asset Base (RAB) approach to pricing WLA services. By holding price caps constant in real terms (CPI-0%) for copper-based services of bandwidths up to 40/10 and allowing pricing flexibility for higher speed services, we will enable Openreach to recover its forecast costs across all of its services, as it continues its planned rollout of full fibre to 3.2m premises in Area 3.

1.27 In the LL Access market, we require Openreach to provide dark fibre access at cost. This will allow competing telecoms providers to build their own active leased lines in

competition with BT while ensuring that Openreach can recover its efficiently incurred costs.

- 1.28 Although we expect dark fibre access to become the primary LL Access remedy over time in Area 3, we continue to require Openreach to provide active leased line services, with price caps held constant in real terms (CPI-0%). This is to provide regulatory consistency and stability to minimise market uncertainty as the take-up of dark fibre access develops.
- 1.29 While we consider that in Area 3 the likelihood of competitive network entry at scale is low, we recognise that in some areas there may be some commercial build by altnets. Although we consider this is unlikely to lead to material and sustainable competition (see Section 2), it could still benefit consumers. For this reason, we do not wish Openreach to undermine new network provision by setting low rental prices for FTTC and FTTP where altnets are building or planning to build, or through other loyalty-inducing commercial terms. We therefore prohibit geographic price discounting for wholesale broadband rental charges and require Openreach to notify certain proposed commercial terms for analysis.

### **LL Access in the HNR Area**

- 1.30 In the LL Access HNR Area market, while we continue to require Openreach to supply wholesale Ethernet and WDM services, we do not think charge controls or quality of service requirements are appropriate given that competing leased line networks are already present. We therefore require that regulated wholesale leased lines in these areas are charged on a fair and reasonable basis to protect retail competition from the risk of price (margin) squeeze.

### **IEC market**

- 1.31 Our regulation in the IEC market also takes account of the differences in competition at BT exchanges which we identified in our market analysis (Volume 2).

### **BT+1 exchanges**

- 1.32 At BT+1 exchanges, where there is some competition, we require Openreach to provide active leased lines to other exchanges with price caps held constant in real terms (CPI+0%). This provides regulatory consistency and stability to minimise market uncertainty and promote further competition, while protecting customers.

### **BT Only exchanges**

- 1.33 At BT Only exchanges, with no competing networks close by, where there is little prospect of network competition, we continue to require Openreach to provide dark fibre at cost. Dark fibre will promote competition, in the provision of backhaul between exchanges where there are no competing networks, and will also help to reduce barriers to infrastructure build in marginal areas of the access markets.

- 1.34 We also require Openreach to provide active leased lines to other exchanges with price caps held constant in real terms (CPI-0%). This protects customers while use of dark fibre becomes established.

## Copper retirement and WLA remedies

- 1.35 Our copper retirement policy aims to promote fibre investment by reducing the costs of running two parallel networks and increasing Openreach's certainty that it will be able to migrate customers onto the new full-fibre network. At the same time, we want to ensure there are measures in place to protect vulnerable consumers and, where possible, that there are no households left behind. Our policy is designed to achieve this objective by shifting the focus of regulation from copper to full fibre, facilitating the migration of the customer base to full fibre. Consequently, we have incorporated into our WLA market remedies certain provisions to support copper retirement.

## Application of the SMP Conditions to BT Enterprise

- 1.36 In its response to the January 2020 Consultation, BT Group argued that imposing SMP conditions on BT Enterprise (a BT Group business operating downstream of Openreach) would be disproportionate and would prevent BT Enterprise from competing on a level playing field in downstream markets. BT Group requested that BT Enterprise therefore be exempt from the SMP conditions where it builds its own duct, and where it uses inputs from Openreach and/or altnets.<sup>3</sup>
- 1.37 Our SMP conditions apply to BT Group as a whole, including BT Enterprise. Therefore, BT Enterprise is not exempt from the SMP conditions. However, we consider that a request for network access to infrastructure or services deployed by BT Enterprise will not always be reasonable.
- 1.38 BT Group is a vertically integrated operator that owns all its business divisions as well as all network assets. This means that any duct that is built by BT Enterprise becomes an asset of BT Group, thereby expanding its aggregated network. If other telecoms providers do not have access to some elements of BT's physical infrastructure, this could undermine the effectiveness of our primary remedy, PIA.
- 1.39 While BT Enterprise suggests that it would be possible to address this concern by separating BT Enterprise assets from other BT Group assets,<sup>4</sup> this would be complex and costly, and would not address our competition concerns, including that, absent regulation, BT would be able to refuse access to (elements of) its network. We also understand that BT Enterprise intends only limited self-build of duct<sup>5</sup> and therefore do not consider that

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<sup>3</sup> [BT Group](#) response to the January 2020 Consultation, Annex 8; and BT, December 2020, [DPA & the downstream WFTMR response: BT follow up paper](#).

<sup>4</sup> BT, December 2020, DPA & the downstream WFTMR response: BT follow up paper, p3.

<sup>5</sup> BT Group, response to the January 2020 Consultation, paragraph A8.4: "a limited amount of [...] duct primarily at the edges of the network". BT, December 2020, DPA & the downstream WFTMR response: BT follow up paper, page 2, "this exemption request is only for the narrow case where Enterprise needs to build ancillary duct to make effective use of DPA".

allowing access to this duct would put them at a material disadvantage to other telecoms providers.

- 1.40 We therefore consider that a request for network access to duct built by BT Enterprise would be reasonable.
- 1.41 Where BT Enterprise uses inputs from Openreach (e.g. access to physical infrastructure or dark fibre) to supply downstream services, Openreach is subject to appropriate non-discrimination obligations that ensure it does not favour BT's downstream businesses, as discussed in Section 3. Similarly, where BT Enterprise uses inputs from altnets (which are not subject to SMP regulation), it would be in the same position as other customers. Therefore, we consider that it is unlikely a request for network access to the downstream services deployed by BT Enterprise would be reasonable.

## Government's Strategic Statement of Priorities

- 1.42 In October 2019, the Government designated its Strategic Statement of Priorities (SSP) for telecommunications, the management of radio spectrum, and postal services. We are required by section 2B(2) of the Act to have regard to the SSP in the relevant priority areas. This review includes decisions which would take forward a number of the areas covered by the SSP:
- world-class digital infrastructure;
  - furthering the interests of telecoms consumers; and
  - ensuring secure and resilient telecoms infrastructure.
- 1.43 We share the Government's strategic objective to ensure that the UK has world class digital infrastructure. We agree that regulation needs to support investment in the next generation of fast, more reliable fibre networks that will benefit consumers across the UK.
- 1.44 As noted above, our strategy, taking into account our legal duties, is to promote investment in gigabit-capable networks by Openreach and other telecoms providers in order to promote network-based competition. We consider this approach complements Government's investment in digital infrastructure, and will work closely with the UK and devolved Government's to ensure that any funding schemes to deliver digital connectivity continue to complement the proposals in this review.

## How we have had regard to the SSP

- 1.45 In formulating our proposals in this review, we have had regard to the Government's SSP. There are five areas of the SSP on full-fibre connectivity which are particularly relevant:
- Making the cost of deploying full-fibre networks as low as possible by addressing barriers to deployment;
  - Supporting market entry and expansion by alternative network operators through effective access to Openreach's ducts and poles, complemented by access to other utility infrastructure, for example, sewers;

- Stable and long-term regulation that incentivises network investment and ensures fair and effective competition between new and existing network operators;
- An ‘outside in’ approach to deployment that means gigabit-capable connectivity across all of the UK is achieved on a similar timescale, and no areas are left behind;
- A switchover process to enable consumer migration to gigabit-capable services; and
- A flexible and forward-looking view which supports convergence between fixed and mobile networks.

**Making the cost of deploying full-fibre networks as low as possible by addressing barriers to deployment, and supporting market entry and expansion by alternative network operators through effective access to Openreach’s ducts and poles**

- 1.46 The Government’s ‘barrier busting’ programme is addressing the cost of full-fibre networks. We are working closely with them to support work to address barriers to deployment that are outside of Ofcom’s remit.
- 1.47 The 2019 PIMR removed the geographic and product usage restrictions on PIA to essentially allow communications providers to use PIA anywhere within Openreach’s national duct and pole estate and for the deployment of any type of telecommunications network. This enhanced PIA product has been available since August 2019, after the initial product was launched on 1 April 2019.
- 1.48 In the two years since the enhanced PIA product was launched, telecoms providers have placed orders to use c. 23,000km of ducts and c. 140,000 poles. We expect to see order volumes continue to grow strongly.
- 1.49 We have decided to maintain the requirement on Openreach to provide PIA which will continue to allow telecoms providers greater access to Openreach’s telegraph poles and underground ducts. This will mean that telecoms providers would be able to lay their own fibre networks using Openreach’s infrastructure, regardless of whether they are serving residential customers, large businesses or mobile operators. Further detail about our proposals to regulate PIA can be found in Section 4.

**Stable and long-term regulation that incentivises network investment and ensures fair and effective competition between new and existing network operators**

- 1.50 The relevant provisions in section 84A of the Act enable us to provide for longer market review periods of five years, which provide greater regulatory certainty for businesses looking to invest. This document sets out our detailed plans for regulation of the fixed telecoms markets from 2021 to 2026, to provide that certainty.

**An ‘outside in’ approach to deployment that means gigabit-capable connectivity across all of the UK is achieved on a similar timescale, and no areas are left behind**

- 1.51 Our decisions on Area 3 charge controls, as set out in this document, will complement the schemes which the UK and devolved Governments are working to design to help improve coverage of broadband services to the hardest to reach areas.

- 1.52 Specifically, in Area 3, we are imposing regulation designed to incentivise investment by Openreach. In LL Access Area 3 we also require access to Openreach’s dark fibre at a price that reflects its costs. As detailed above, providers will have unrestricted access to Openreach’s ducts and poles which can cut the upfront cost of building these networks by around half.

#### **A switchover process to enable consumer migration to gigabit-capable services**

- 1.53 In order to support Openreach in retiring its copper network, in broad terms we are removing regulation on Openreach’s copper products in an exchange area where certain fibre build thresholds are reached, and transfer regulation (including relevant charge controls) from copper to fibre services. These regulatory conditions should allow Openreach to incentivise providers to encourage their customers to switch to fibre. Further detail about our proposals can be found in Section 2.

#### **The policy and regulatory framework should be sufficiently flexible and forward-looking to support convergence between fixed and mobile networks**

- 1.54 In the longer term, we expect more convergence in the telecoms sector. Our work is already adapting to support the convergence of fixed and mobile networks, through this unified market review, and our decision to allow telecoms providers to lay their own fibre networks using Openreach’s infrastructure, regardless of whether they are serving residential customers, large businesses or mobile operators. Our decisions also support the deployment of 5G networks through ensuring that there is provision of backhaul services. Our decision to require Openreach to offer dark fibre at cost-based charges in LL Access Area 3 facilitate this, and in LL Access Area 2 we expect the market to provide these services.

### **Insufficiency of competition law**

- 1.55 Under Section 87(1) of the Act, where we have made a determination that an operator has SMP in an identified services market, we must impose such requirements as we consider appropriate. However, in considering the imposition of remedies, we take into account the potential application of competition law. In Volume 2, we have considered whether competition law, in particular the rules prohibiting the abuse of a dominant position, would be effective in responding to the competition concerns identified above. Below we consider some additional factors specific to the design of our remedies.
- 1.56 First, we have taken account of the fact that the products in the wholesale markets we have identified are inputs into other downstream markets. Appropriate *ex ante* intervention at the upstream level can promote effective competition in downstream markets. It can also facilitate the emergence of effective competition at the upstream level itself. Competition law, insofar as is relevant, prohibits the abuse of a dominant position – it does not seek to promote competition, which is one of the aims of our package of *ex ante* remedies.

- 1.57 Second, the requirement to address the competition problems in each of the markets in which we find SMP means imposing an interconnected and complex package of remedies, including provisions to ensure that they remain effective for the duration of the review period.
- 1.58 Third, we consider it is important to provide sufficient certainty about the rules applying to the dominant provider in the wholesale markets. We consider this certainty is best achieved through *ex ante* regulation. *Ex ante* regulation will also allow for timely intervention by us proactively enforcing the conditions and, if necessary, by parties bringing regulatory disputes to us for swift resolution.
- 1.59 We therefore consider that, in the current and expected circumstances of the relevant markets over the review period, competition law alone would be insufficient to address the competition problems we have identified. We explain in our assessment of individual remedies where we consider there are particular additional relevant points relating to the sufficiency of competition law.

## Structure of this volume

- 1.60 In the rest of this volume we set out the non-pricing remedies we have decided to impose on Openreach as follows:
- Section 2 – copper retirement remedies;
  - Section 3 – general remedies for all relevant fixed telecoms markets, including network access on reasonable request and non-discrimination;
  - Section 4 – specific remedies in the physical infrastructure market;
  - Section 5 – specific remedies in the WLA, LL Access and IEC markets, except dark fibre;
  - Section 6 – specific remedies in the form of dark fibre in the LL Access and IEC markets;
  - Section 7 – regulation of geographic discounts and other commercial terms in the WLA and LL Access markets; and
  - Section 8 – legal tests.

## 2. Copper Retirement

- 2.1 This section sets out our decisions on the regulatory transition from wholesale copper services to wholesale full fibre services in the WLA markets in Area 2 and Area 3.
- 2.2 In summary, we have decided that the network access requirement, charge control and other supporting obligations on Openreach will transition from access based on copper to access based on fibre to support the business case for full-fibre deployment. At the same time, our decisions ensure there is always appropriate wholesale regulation to protect customers, and a notification regime to provide transparency to alternative network operators, ISPs and customers.
- 2.3 We have decided to implement our consultation proposals for the staged removal of regulation, culminating in the removal of the charge control on copper services. We have decided it is too early in the migration process to define the conditions that should trigger the complete deregulation of copper services. We will therefore not proceed with our proposal to set a third threshold for the removal of the remaining regulation on copper services in the forthcoming market review period.
- 2.4 This section is structured as follows:
- First, we outline our consultation proposals about the regulatory transition from copper to full fibre.
  - Second, we summarise respondents' comments.
  - Third, we set out our reasoning and decisions. We explain how regulatory transition will meet our objective to promote competition and investment in gigabit-capable networks by Openreach and, where viable, by other operators, while protecting consumers. We then set out the coverage thresholds that must be met and the staged removal of regulation from copper services, and the notification regime and monitoring that we will put in place.
  - Lastly, we summarise our decisions.

### Our proposals

#### Approach to our copper retirement policy

- 2.5 Investment in full fibre is part of a wider transformation of the UK's telecoms infrastructure. On the Openreach network, this transformation has two major parts:
- Migration of telephone services to IP technology and the withdrawal of traditional analogue telephony. This is known as 'PSTN switch-off', with PSTN standing for the legacy public switched telephone network; and
  - Full fibre roll-out and subsequent migration of services to full fibre and the withdrawal of copper-based services. This is known as 'copper retirement'.

- 2.6 Openreach expects that the PSTN switch-off will happen nationwide in December 2025, rather than by stages. Openreach has a programme to migrate customers off its legacy analogue network ahead of that.
- 2.7 In contrast, Openreach is planning to retire its copper access network on an exchange area by exchange area basis, in some cases over a longer timeframe, after it has deployed full fibre and customers have been migrated to the new network.
- 2.8 Given the speed at which Openreach is progressing its full fibre deployment, and the lag of several years between full fibre deployment and copper retirement, for the majority of the UK's 30 million premises, migration to IP and the subsequent PSTN switch-off is likely to progress at a faster pace than copper retirement, and for most areas the complete retirement of copper services will take place some years after PSTN switch-off.
- 2.9 As Openreach's full fibre deployment progresses, eventually its copper network will need to be decommissioned to avoid the costly running of two parallel networks. In the January 2020 Consultation, we explained that our copper retirement policy aims to promote full fibre investment and support the migration to full-fibre services by shifting the focus of regulation from copper to full fibre.
- 2.10 We were concerned that Openreach may have the incentive to deploy full fibre in a way that deters competitor investment in an exchange area in the short-term and then redeploy resources to provide coverage elsewhere rather than completing coverage in an area to the extent possible.
- 2.11 We explained that our policy on copper retirement should also aim to ensure that, wherever possible, no homes and businesses are left without having an ultrafast<sup>6</sup> service available.

## Regulatory transition from copper to full-fibre services

- 2.12 Our copper retirement proposals, which were described in three consultations – the January 2020 Consultation, the June 2020 Consultation and the October 2020 Copper Retirement Consultation – set out a regulatory transition from copper services to full-fibre services, over a set period and on an exchange by exchange basis, in line with Openreach's exchange-by-exchange approach to service migration.
- 2.13 We proposed a three-stage regulatory transition from copper to full-fibre services.

### First threshold

- 2.14 The first threshold is the threshold that Openreach must meet to ***stop selling new copper services (stop sell)*** in an exchange area. At this point customers who want to switch providers, upgrade or move homes will need to purchase broadband and voice services

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<sup>6</sup> By 'ultrafast' we mean broadband services capable of delivering a minimum of 300Mbit/s services, be this by FTTP or G.fast.

over an Openreach full fibre connection or from an alternative network operator. It applies when:

- Openreach has published a notice at least 12 months in advance of the date when it expects 75% of premises in an exchange area to be covered by ultrafast (the first threshold); and
- Openreach makes ultrafast services available at 75% of premises in the exchange area.

### Second threshold

2.15 The second threshold is the threshold that Openreach must meet for the **charge control on copper services to be withdrawn** in a completed exchange area where full fibre is available.<sup>7</sup> It applies when:

- Openreach has published a notice at least 12 months in advance of the date when it expects the exchange to be completed;
- Openreach makes ultrafast services available at all premises in the exchange area other than those excluded (a 'completed exchange').<sup>8</sup> We said that we would give a direction about the circumstances in which premises can be excluded from the definition of a completed exchange and that we would set out our proposals after the publication of this statement<sup>9</sup>; and
- At least two years has passed since the stop sell has come into effect.

### Third threshold

2.16 The third threshold is the threshold that Openreach must meet for the **complete withdrawal of regulation**<sup>10</sup> of copper services where full fibre services are available in an exchange area. It applies when:

- The criteria for the second threshold have been met;
- Take-up of Openreach copper-based services is no more than 10% of relevant premises<sup>11</sup> within the exchange area and there are reasonable measures in place to support vulnerable consumers;
- Openreach has published a notice to confirm that the preceding criteria have been met; and
- Two years have passed since Openreach published that notice.

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<sup>7</sup> In this chapter where we refer to the charge control on copper services we mean the charge controls on MPF and FTTC 40/10. The copper charge control will continue to apply in respect of premises where, despite OR's reasonable efforts, it has not been able to make full fibre available.

<sup>8</sup> We plan to consult during 2021/22 on the circumstances under which certain premises may be automatically excluded from the calculation of a complete exchange.

<sup>9</sup> Ofcom, 2020. [Consultation: Copper retirement – process for determining when copper regulation can be removed](#), [accessed 11 March 2021].

<sup>10</sup> Except where copper services are used for critical national infrastructure (CNI). Ofcom, 2020. [Consultation: Copper retirement – conditions under which copper regulation could be completely withdrawn in ultrafast exchanges](#), [accessed 11 March 2021].

<sup>11</sup> By 'Relevant Premises' we mean all premises in a local serving exchange area as at the date of the first threshold notice given in respect of that local serving exchange.

## Technical issues arising from the notification regime

### Defining complete ultrafast coverage in an exchange

- 2.17 We proposed that the basis of our calculation for the thresholds was the proportion of premises within an exchange which have access to an ultrafast service. We recognised that, in some instances, this may include G.fast connections capable of reaching ultrafast speeds (300Mbit/s or more).
- 2.18 We proposed that the baseline for the calculations of ultrafast coverage should include those premises that exist at the time the first threshold notice is published in relation to the exchange and are still premises when coverage is measured, i.e. not new build after the start of the deployment.<sup>12</sup>

### Defining exchange completion

- 2.19 In January 2020, we recognised that there may be exceptional circumstances where Openreach is not able to deploy full fibre to some premises. We proposed that, when calculating whether coverage in an exchange is complete, we should exclude from our calculations those premises where Openreach has made all reasonable efforts, but has been unable to make ultrafast services available because of long-term restrictions to street or premises access, or other factors beyond Openreach's control. We acknowledged that we did not have enough information at that point to define circumstances that might justify an exclusion, so said we would consult separately on this.
- 2.20 In June 2020 we sought stakeholder views on our revised proposal to wait until after our final decisions in this statement to consider defining the circumstances in which premises can be excluded from the definition of a completed exchange. We proposed that we would define those circumstances by giving a direction under the WFTMR SMP conditions.

## Monitoring

- 2.21 We explained that we would monitor the implementation of our copper retirement policy. This would include gathering information and evidence on the issues that resulted in Openreach not being able to deploy full fibre to some premises, even after all reasonable efforts. This information would underpin our decisions on the circumstances in which premises can be excluded from the definition of a completed ultrafast exchange.
- 2.22 Following on from the notification of the stop sell in an exchange, we said we would ask for information on:
- the number and proportion of premises where ultrafast services are not available within the exchange area; and

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<sup>12</sup> We said in the January 2020 Consultation that ultrafast coverage should include those premises that exist at the time of the start of the roll out. We clarify here that by "start of the roll-out", we mean the time the first threshold notice is published, 12 months ahead of the 75% coverage threshold being met.

- categories of reasons why those premises have been left without ultrafast services available, and number and proportion of premises in each category. At least in the first instance, we said we would ask Openreach to define those categories.
- 2.23 We said that where Openreach notified an exchange as complete, we would seek information from Openreach on the percentage of premises where ultrafast was available, as well as those served by full-fibre services.
- 2.24 We proposed to seek information from Openreach on the number and proportion of its customers remaining on Openreach copper-based services in each exchange, including information on whether any of those services in that exchange support CNI.

## Stakeholder responses

### Approach to our copper retirement policy

- 2.25 Stakeholders were generally supportive of our approach of incentivising full fibre investment by shifting the focus of regulation from copper to full-fibre services. There was a recognition that eventually copper services should be retired as full fibre becomes available, and that regulation should facilitate this shift.<sup>13</sup>
- 2.26 However, some stakeholders were concerned about the impact of our proposals on network competition, retail competition, and broadband customers. We go through those comments below.

### Impact of our proposals on network competition

- 2.27 Some stakeholders were concerned that we had not sufficiently considered the impact of our copper retirement policy on network competition and competitor investment.<sup>14</sup> Stakeholders believed that our proposals incentivise Openreach to overbuild altnets in exchanges where alternative full-fibre networks are present; that there is a risk of foreclosing altnet investment because increasing take-up on their networks will be more difficult for altnets where telecoms providers rapidly migrate their customers from Openreach copper to Openreach full fibre, and that additional measures to encourage switching to other networks are required<sup>15</sup>; and that more protection is required for altnets against commercial deals that would negatively impact network competition.<sup>16</sup>

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<sup>13</sup> BT, paragraph 1.3; BUUK, page 1; CityFibre, paragraph 1.78; Gigaclear, paragraph 94; Openreach, page 63; Scottish Government, page 3; [redacted] [a confidential respondent], page 3; [redacted] [a confidential respondent], page 5; and [redacted] [a confidential respondent], page 5, in their responses to the January 2020 Consultation. Other respondents did not comment on our general approach.

<sup>14</sup> For instance CityFibre made the specific point that our January and October Consultations contained no assessment of the impact of our copper retirement proposals on competitors' incentives to rollout their networks, and called for a detailed competition assessment. CityFibre response to October 2020 Copper Retirement Consultation, paragraphs 1.25, 3.44 and 3.58.

<sup>15</sup> TalkTalk, paragraph 2.3; CityFibre, page 3; County Broadband, page 5; Fern Trading, page 2; INCA, pages 4-5; Zzoomm, paragraph 12, in their responses to the October 2020 Copper Retirement Consultation.

<sup>16</sup> CityFibre, page 3; County Broadband, page 5; Fern Trading, page 2; INCA, pages 4-5; Zzoomm, paragraph 12; in their responses to the October 2020 Copper Retirement Consultation.

- 2.28 In its response to the January 2020 Consultation and in evidence to the DCMS Committee, CityFibre argued that our proposals focus on the migration of customers from Openreach's copper to Openreach's full-fibre network.<sup>17</sup> CityFibre said our proposals did not consider how the migration will take place in areas where other networks have deployed full fibre.<sup>18</sup> BT also asked Ofcom to provide more clarity.<sup>19</sup>
- 2.29 Some altnets said we should include other full fibre build to limit impact on competition.<sup>20</sup> They argued that our proposal encouraged overbuild by Openreach of altnets' existing full fibre infrastructure because, if an altnet is present in part of the exchange, our policy incentivises Openreach to build in the whole exchange, including where there is an alternative network.
- 2.30 Some stakeholders also submitted that our regulations would undermine BDUK's procurements by incentivising Openreach to overbuild BDUK-funded networks.<sup>21</sup> To mitigate this risk, these stakeholders said that Ofcom should leave open a route for Openreach to withdraw copper where another full fibre provider has covered an area with the benefit of public subsidy and has met certain consumer protection/competition requirements.

### Impact of our proposals on broadband customers

- 2.31 Some stakeholders were concerned about the impact of our proposals on residential and business broadband customers, sometimes with a focus on specific categories of customers.
- 2.32 Stakeholders raised concerns about price rises for customers. Stakeholders said that having the right migration commercials available in the wholesale market is key to incentivising end customers to migrate to full fibre, but switching costs will raise prices for end customers and are likely to put people off switching.<sup>22</sup> TalkTalk said that Openreach would not be incentivised to offer good commercial terms because our stop sell proposals would deliver full fibre volumes anyway, and that the lower costs entailed by copper retirement would be captured as extra profit by BT.<sup>23</sup>

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<sup>17</sup> CityFibre response to January 2020 Consultation, pages 164-165.

<sup>18</sup> House of Commons DCMS Committee, December 2020. [Broadband and the road to 5G](#), HC 153, paragraph 108.

<sup>19</sup> [BT](#) response to October 2020 Copper Retirement Consultation, paragraphs 4.6-4.7.

<sup>20</sup> [Axione](#), page 43; BUUK, page 3; and [redacted] [a confidential respondent], in their responses to January 2020 Consultation. Fern Trading, page 3; Zzoomm, page 4; County Broadband, page 5, in their responses to the October 2020 Copper Retirement Consultation.

<sup>21</sup> Zzoomm, paragraph 14; CityFibre, paragraph 1.19; County Broadband, page 5; INCA, paragraph 25; in their responses to October 2020 Copper Retirement Consultation.

<sup>22</sup> [Vodafone](#) response to October 2020 Copper Retirement Consultation, page 6.

<sup>23</sup> TalkTalk response to October 2020 Copper Retirement Consultation, pages 2-3. We address switching when discussing the impact of our proposals on network competition.

- 2.33 Some stakeholders were particularly concerned about price increases for vulnerable consumers.<sup>24</sup> Some stakeholders highlighted the need to consider the impact of our proposals on remote rural communities and premises.<sup>25</sup>
- 2.34 TalkTalk raised concerns about the price increases faced by standard broadband customers when they are forced to migrate to full-fibre services.<sup>26</sup> TalkTalk also said that a meaningful proportion of customers will remain on standard broadband during the review period, and these customers are less likely to value full fibre.
- 2.35 The Welsh Government highlighted that there will be customers who do not wish to move or who are disengaged from the market.<sup>27</sup>
- 2.36 Regarding customers who remain on copper, the Communications Management Association were concerned that the removal of the charge control on the copper 40/10 anchor product might allow Openreach to extract excessive profits from end customers who remain on copper services.<sup>28</sup> Vodafone argued that pricing stability on copper services, Wholesale Line Rental (WLR) in particular, should be maintained until full fibre is available.<sup>29</sup>
- 2.37 Regarding Critical National Infrastructure (CNI), TalkTalk and others<sup>30</sup> also highlighted the potential for higher costs for CNI which remains on copper services once the charge control on copper services is lifted. TAUWI was concerned about Openreach increasing prices even where there is no suitable full-fibre replacement service available.<sup>31</sup>
- 2.38 Stakeholders also highlighted concerns regarding the migration process itself. CityFibre<sup>32</sup> and FCS<sup>33</sup> argued that our proposed approach would force telecoms providers and customers to rapidly migrate and would result in a number of consumer detriments.
- 2.39 TalkTalk raised concerns about customer disruption from the migration to full fibre, highlighting complexities for consumers who may be dependent on care alarms or

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<sup>24</sup> [ACNI](#), page 2; and [Welsh Government](#), page 2; in their responses to the January 2020 Consultation.

<sup>25</sup> [Advisory Committee for Scotland](#) sought clarification of support for remote locations if fibre is not available in response to June 2020 Consultation, page 4. [Borderlands Partnership](#) asked us for stronger commitments to protect hard-to-connect properties and vulnerable consumers in rural areas in response to January 2020 Consultation, pages 1-2. [Telint](#) said that Openreach should not be allowed to cherry-pick premises to the detriment of remote communities in response to June 2020 consultation, page 3.

<sup>26</sup> [TalkTalk](#) response to January 2020 Consultation, page 111. Vodafone also called for the removal of connection charges for the migration to fibre. See Vodafone response to October 2020 Copper Retirement Consultation, page 3. In Volume 4 Section 5 of this Statement we set out our decision to remove connection charges for FTTP 40/10 connections where there is an existing active Openreach connection.

<sup>27</sup> Welsh Government response to January 2020 Consultation, page 2.

<sup>28</sup> [Communication Management Association](#) response to October 2020 Copper Retirement Consultation, page 2.

<sup>29</sup> Vodafone response to October 2020 Copper Retirement Consultation, page 2. The deregulation of WLR is discussed in Volume 2 Section 9.

<sup>30</sup> [redacted] [A confidential respondent] response to the January 2020 Consultation, pages 4-5. [Atos IT Services](#), page 2; and [Colt](#), page 3, in their responses to the October 2020 Copper Retirement Consultation.

<sup>31</sup> [TAUWI](#) response to October 2020 Copper Retirement Consultation, page 3.

<sup>32</sup> CityFibre response to October 2020 Copper Retirement Consultation, page 4.

<sup>33</sup> [FCS](#) response to October 2020 Copper Retirement Consultation, page 1.

consume voice-only or low-bandwidth services.<sup>34</sup> ITSPA<sup>35</sup> and Gamma<sup>36</sup> expressed concern that the transition to full fibre may mean that the configuration of some ISP-supplied Customer Premise Equipment (CPE) could result in some “Over The Top” (OTT) voice services not functioning correctly. Vodafone was concerned that the parallel migration processes of traditional telephony to IP-based voice services over copper or full fibre broadband, and copper services to fibre services, would result in a disruptive double migration for customers.<sup>37</sup>

- 2.40 One stakeholder highlighted the fact that businesses have been facing unprecedented times. This stakeholder said that it is likely that the impact of the current macro-economic situation will continue to be felt at least in the first year of this market review.<sup>38</sup> This stakeholder believed that in that context, migrating their connections may well not be the first priority of impacted businesses.

## Regulatory transition from copper to full-fibre services

### Notification regime

- 2.41 Gigaclear and FCS welcomed the proposed 12-month notification of 75% ultrafast coverage being reached in an exchange.<sup>39</sup> On the other hand, TalkTalk was concerned that Openreach could game the notification period, taking longer than 12 months to reach 75% ultrafast coverage and therefore reducing transparency on when the first threshold will actually be reached. TalkTalk proposed a maximum a 15 month ‘shelf life’ for the 75% notification, with an additional confirmatory notification at three months from the 75% threshold.<sup>40</sup>

### First threshold

#### *Coverage threshold*

- 2.42 Respondents had mixed views about whether 75% full fibre coverage for the application of the stop sell was reasonable, with most respondents silent, some supportive<sup>41</sup> and some arguing that it should be as high as possible.<sup>42</sup>
- 2.43 Stakeholders highlighted the need for Openreach and telecoms providers to be fully prepared before the migration.<sup>43</sup> TalkTalk proposed additional “operational readiness” thresholds, including availability of a full suite of services required to support telecoms providers in migrating their customers to like-for-like services, as well as appropriate

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<sup>34</sup> TalkTalk response to October 2020 Copper Retirement Consultation, pages 8-9.

<sup>35</sup> [ITSPA](#) response to October 2020 Copper Retirement Consultation, pages 3-4.

<sup>36</sup> [Gamma](#) response to October 2020 Copper Retirement Consultation, paragraph 51.

<sup>37</sup> Vodafone response to October 2020 Copper Retirement Consultation, page 4.

<sup>38</sup> Name Withheld response to October 2020 Copper Retirement Consultation, page 1.

<sup>39</sup> Gigaclear response to the January 2020 Consultation, page 19; [FCS response](#) to our June 2020 Consultation, page 1.

<sup>40</sup> TalkTalk response to the January 2020 Consultation, paragraph 6.61

<sup>41</sup> FCS response to June consultation, page 1.

<sup>42</sup> [ITSPA](#) response to June 2020 Consultation, page 2; [Gamma](#) response to June 2020 Consultation, page 6.

<sup>43</sup> TalkTalk response to January 2020 Consultation, page 106; TalkTalk response to October 2020 Copper Retirement Consultation, page 4; Gamma response to June 2020 Consultation, page 4.

service maintenance levels for business customers.<sup>44</sup> TalkTalk said that its operational readiness proposals were necessary to ensure Openreach and telecoms providers are ready to progress with stop sell and exchange completion together.

- 2.44 ITSPA and Gamma said that the unknowns of PSTN closure means that the current market remedies should be extended until at least the trials at Salisbury and Mildenhall<sup>45</sup> are concluded.<sup>46</sup>

#### *Two-year transition period of parallel regulation*

- 2.45 Where they commented, stakeholders were supportive of our proposal that there should be a transition period, where copper and full fibre regulations run in parallel, following stop sell and before the charge control on copper services can be removed.
- 2.46 However, Openreach<sup>47</sup> and TalkTalk<sup>48</sup> queried whether two years was the appropriate period. Openreach, while initially supportive of our proposed transition period, latterly argued that it should be reduced to one year to encourage migration to full fibre.<sup>49</sup> Conversely, TalkTalk argued that the transition period should be extended to three years, citing risk of consumer detriment from a two-year transition.<sup>50</sup>
- 2.47 Longer and more complex contracting arrangements for businesses were also raised. TalkTalk<sup>51</sup>, Vodafone<sup>52</sup> and Gamma<sup>53</sup> said that business customers' transition to full fibre may be impacted by a lack of equivalent product availability.

#### **Second threshold**

- 2.48 Openreach disagreed that a second threshold should be subject to the completion of ultrafast coverage in the exchange area, arguing that it could not practically achieve such a high coverage threshold. Instead, Openreach argued that the charge control on copper services should be withdrawn one year after the stop sell, without a further coverage threshold.<sup>54</sup>

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<sup>44</sup> TalkTalk response to January 2020 Consultation page 5, paragraph 1.24, and response to October 2020 Copper Retirement Consultation, page 4.

<sup>45</sup> As part of its plans to roll out fibre and modernise its network to support the delivery of telephone services using IP technology, Openreach is undertaking two trials. In preparation for PSTN Switch-off, the Mildenhall trial tests the processes for withdrawing WLR, and migrating customers from legacy copper services to replacement copper services which will support the delivery of telephone services over broadband connections. In preparation for copper retirement, the Salisbury trial tests the processes for migrating customers to full-fibre services and, ultimately, withdrawing legacy copper services. Further information can be found here: Ofcom, 2020. [Promoting competition and investment in fibre networks: Measures to support Openreach's proposed trial in Salisbury – migrating customers to full fibre and withdrawing copper services](#), statement, [accessed 11 March 2021].

<sup>46</sup> ITSPA response to June 2020 Consultation; Gamma response to October Copper Retirement Consultation, pages 2-3.

<sup>47</sup> Openreach response to January 2020 Consultation, page 63.

<sup>48</sup> TalkTalk response to January 2020 Consultation, para 6.49.

<sup>49</sup> [Openreach](#) response to October 2020 Copper Retirement Consultation, page 3.

<sup>50</sup> TalkTalk response to January 2020 Consultation, pages 107-108.

<sup>51</sup> TalkTalk response to October 2020 Copper Retirement Consultation, page 5.

<sup>52</sup> Vodafone response to October 2020 Copper Retirement Consultation, page 6.

<sup>53</sup> Gamma response to October 2020 Copper Retirement Consultation, pages 6-7.

<sup>54</sup> Openreach response to October 2020 Copper Retirement Consultation, pages 7-8.

- 2.49 However, FCS took the view that the charge control on copper services should not be lifted at the end of the transition period. It argued that the stop sell by itself is a sufficient curb on continuing consumption of copper services, and that lifting the charge control on copper services would result in a reduced incentive for Openreach to address “edge cases”.<sup>55</sup>
- 2.50 Some stakeholders raised concerns about the risk of higher costs for customers who are either unable or unwilling to move to full fibre, when the charge control on copper services is lifted.<sup>56</sup> We address these comments when we discuss the link between our proposals and broadband prices for customers.

### Third threshold

#### *Rationale for the third threshold*

- 2.51 Some stakeholders disagreed with our rationale for deregulation.<sup>57</sup> In particular, CityFibre was concerned that our proposals would not give altnets enough time to achieve sufficient scale to be seen as a viable alternative, which would prevent investment in alternative networks.<sup>58</sup> FCS said that our proposals would trigger forced migrations earlier than required, and that regulation should provide greater incentives for end-customers to move to full-fibre services.<sup>59</sup>
- 2.52 Conversely, the Communications Management Association<sup>60</sup> said that Ofcom should regulate to require Openreach to make plans to migrate all customers off copper, otherwise Openreach would be able continue to make excessive profits from copper-based services indefinitely.
- 2.53 Other stakeholders, including Openreach, agreed that there should be deregulation but raised concerns in relation to the specific conditions under which we proposed to allow for the removal of all remaining regulation on copper services (see below).<sup>61</sup> In particular, BT and Openreach disagreed with the proposed threshold requirement, saying that it is unreasonable<sup>62</sup> and set at an overly ambitious level.<sup>63, 64</sup>

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<sup>55</sup> FCS response to October 2020 Copper Retirement Consultation, page 1.

<sup>56</sup> [Which?](#), page 5; Welsh Government, page 2; and Advisory committee for Northern Ireland, page 2 in their responses to the January 2020 Consultation.

<sup>57</sup> TAUWI, pages 2-3; Communication Management Association, page 1; and FCS, page 1, in their responses to the October 2020 Copper Retirement Consultation.

<sup>58</sup> CityFibre also expressed this concern in relation to our copper retirement proposals more generally.

<sup>59</sup> FCS response to October 2020 Copper Retirement Consultation, page 1.

<sup>60</sup> Communications Management Association response to October Copper Retirement Consultation, page 1.

<sup>61</sup> Openreach, page 6; BT, page 8; Zzoomm, paragraphs 5-7; INCA, paragraphs 12-14; County Broadband, page 3; and Fern Trading, paragraphs 8-10, in their responses to the October 2020 Copper Retirement Consultation.

<sup>62</sup> Openreach response to October 2020 Copper Retirement Consultation, page 8.

<sup>63</sup> BT response to October 2020 Copper Retirement Consultation, page 8.

<sup>64</sup> The Communications Management Association said that the threshold would result in exposure to even higher costs for customers remaining on copper-based services; this comment is captured in our discussion on concerns that the third threshold would result in exposure to even higher costs for customers remaining on copper. Communications Management Association response to October 2020 Copper Retirement Consultation, page 3.

- 2.54 A small number of stakeholders supported the conditions we proposed before allowing complete deregulation. TalkTalk welcomed our engagement on the conditions for complete deregulation of copper services, and highlighted the importance of regulatory certainty for ensuring a smooth transition from copper to full fibre.<sup>65</sup> TalkTalk also said that it welcomed our proposals to protect vulnerable consumers, and that our proposed 10% uptake threshold seemed reasonable.<sup>66</sup> The Ombudsman Service said our proposed approach was sensible<sup>67</sup>, and Citizens Advice Scotland (CAS) said that it understands the protections that our conditions can offer consumers during the migration.<sup>68</sup>

## Technical issues arising from notification regime

### Defining complete ultrafast coverage in an exchange

- 2.55 TalkTalk and Colt<sup>69</sup> said that we should not count G.fast<sup>70</sup> in our assessment of either exchange completion or coverage thresholds, arguing that including G.fast weakens the incentives on Openreach to deploy full fibre, and that it is inconsistent with our objective of promoting FTTP and Openreach's own 'fibre first' approach.

### Defining exchange completion

- 2.56 Stakeholders<sup>71</sup> were principally supportive of our proposal to delay our consultation on the circumstances under which premises can be excluded when calculating whether the threshold for treating an ultrafast enabled exchange as complete has been met. They agreed with our assessment that lessons from the Salisbury and Mildenhall trial areas, as well as the initial tranches of notified exchanges, would provide a deeper evidence base for our consultation, and lessen the risk of unforeseen consequences from early definition.
- 2.57 Vodafone said it was unclear about our reasoning for delaying setting the criteria and urged us to make a decision at the earliest possible opportunity to give certainty.<sup>72</sup>
- 2.58 A couple of stakeholders raised some concerns about the definition of 'relevant premises', and how Openreach is interpreting this in the context of calculating exchange completion. This applied to examples such as street furniture and cash machines.<sup>73</sup>

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<sup>65</sup> TalkTalk response to October 2020 Copper Retirement Consultation, page 6, paragraph 3.4.

<sup>66</sup> However, TalkTalk supported our proposal in the January 2020 Consultation to retain the general and specific access requirements. TalkTalk response to January 2020 Consultation, paragraph 6.36.

<sup>67</sup> [Ombudsman Service](#) response to October 2020 Copper Retirement Consultation, page 1.

<sup>68</sup> [CAS](#) response to October 2020 Copper Retirement Consultation, page 1.

<sup>69</sup> TalkTalk response to January 2020 Consultation, pages 105 – 106; Colt response to October 2020 Copper Retirement Consultation, page 2.

<sup>70</sup> G.fast is an ultrafast broadband technology that can deliver over 100Mb/s over short twisted copper lines, and potentially up to 300Mb/s over short distances from the cabinet.

<sup>71</sup> Advisory Committee for Scotland, page 1; [BUUK](#), page 1; FCS, page 2; Gamma, paragraph 5; [JRC](#), page 1; [Scotland 5G Centre](#), page 3; [TalkTalk](#), paragraph 1.2; [TAUWI](#), page 2; in their responses to the June 2020 Consultation.

<sup>72</sup> [Vodafone](#) response to June 2020 Consultation, page 2.

<sup>73</sup> Gamma response to October 2020 Copper Retirement Consultation, page 11; Name Withheld response to October 2020 Copper Retirement Consultation, page 1.

## Monitoring regime

- 2.59 Those stakeholders that commented on our proposed monitoring generally wanted us to set out in more detail the data requested or the process to audit the data.
- 2.60 In relation to further information, TalkTalk, the Welsh Government, and Zzoomm wanted to know, respectively, the information we will be requesting from Openreach on roll-out progress under our statutory powers and on what frequency, how we will monitor Openreach price commitment for vulnerable consumers, and how we will monitor industry's communications with customers.<sup>74</sup> Colt suggested that Openreach should be required to publish numbers on use of G.fast.<sup>75</sup> The Advisory Committee for Northern Ireland generally called for a strong monitoring regime in relation to vulnerable consumers.<sup>76</sup>
- 2.61 Several stakeholders also recommended that we audit Openreach's information or explain how that audit would be carried out.<sup>77</sup>

## Our reasoning and decisions

- 2.62 For the reasons set out below, having taken account of the consultation responses we have received, we confirm our proposals to progressively remove regulation from copper services to incentivise migration to full-fibre services, as set out in our January 2020 Consultation and June 2020 Consultation.

## Approach to our copper retirement policy

- 2.63 As explained in Volume 3 Section 1 in this review:
- In Area 2 our objective is to promote competition and investment in gigabit-capable networks by Openreach and other operators, protect customers, and protect existing models of downstream competition in the short-term; and
  - In Area 3 our objective is to promote investment in gigabit-capable networks by Openreach, to promote competition based on access to Openreach's networks, and to protect customers.
- 2.64 Our copper retirement policy is part of the package of remedies set out in this Statement that supports these objectives.

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<sup>74</sup> TalkTalk response to June 2020 Consultation, paragraph 2.6; Welsh Government response to January 2020 Consultation, page 2; Zzoomm response to October 2020 Copper Retirement Consultation, paragraphs 20-23.

<sup>75</sup> Colt response to October 2020 Copper Retirement Consultation, page 3. Vodafone also considered that Ofcom should do more to ensure that Openreach do not use G.fast instead of planned fibre build in response to October 2020 Copper Retirement Consultation, pages 5-6.

<sup>76</sup> ACNI response to January 2020 Consultation, page 2.

<sup>77</sup> TalkTalk response to June 2020 Consultation, paragraph 2.6; [Name withheld](#) response to October 2020 Copper Retirement Consultation, page 3; Colt response to October 2020 Copper Retirement Consultation, page 3, paragraph 2.2. Colt specifically recommended that Ofcom should audit Openreach's self-certified excluded premises.

### Impact of our decisions on network competition

- 2.65 Our approach to copper retirement supports Openreach's full fibre investment case by progressively shifting regulation from copper services to full-fibre services. This limits the extent to which Openreach will have to operate both copper and full-fibre networks in parallel and increases Openreach's certainty that it will be able to migrate customers onto its new fibre network.
- 2.66 While by definition copper retirement is focused on Openreach's investment incentives, we also consider that our policy – as part of the wider package of remedies – promotes investment by other operators in Area 2 by focussing Openreach's incentives on its ability to migrate customers rather than on reducing prices.
- 2.67 We do not agree with network competitors<sup>78</sup> that said our regulations would deter alternative network investment by forcing Openreach to deploy full fibre where network competitors have already built in part of an exchange area. Our approach is intended to incentivise Openreach to provide ultrafast services throughout an exchange area and is part of a package of measures intended to promote competition and investment in networks. Moreover, exchange areas typically cover significant numbers of premises and the requirement to complete 75% and complete ultrafast coverage for the respective thresholds benefits the investment case for altnets more broadly. This is because, without the incentive to reach these thresholds, Openreach may otherwise target lesser coverage across more exchange areas to the detriment of the altnet investment case.
- 2.68 We do not agree with the proposal set out by CityFibre<sup>79</sup> that the thresholds should apply to combinations of exchanges representing larger areas rather than at each individual exchange. For our approach to copper retirement to have the effect on Openreach incentives to invest and to complete coverage, it has also to be achievable. Openreach's longstanding plans have been for an exchange-based roll-out. For us to adopt a broader unit for our regulation would likely reduce the ability of Openreach to reach the thresholds and thus reduce both its incentives to invest and to provide complete coverage in exchange areas. Moreover, such an approach could cause Openreach to rely more on commercial levers to provide incentives to migrate and in doing so cause broader pricing pressure that could dampen competitor incentives to invest.
- 2.69 However, we are alive to the risk of Openreach strategically targeting exchange areas where competing networks have built or plan to build and prevent network competitors' roll-out in wider areas. This could be anti-competitive and against customers' interests if it deterred competitors from further roll-out. As mentioned above, this risk is likely to be low given Openreach's commercial incentives are likely to include wider considerations. The role of the Openreach Monitoring Unit further reduces the ability and incentive for Openreach to act anti-competitively.

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<sup>78</sup> Axione response to January 2020 Consultation, page 43; Fern Trading response to October 2020 Copper Retirement Consultation, page 3; Zzoomm response to October 2020 Copper Retirement Consultation, page 4. BUUK response to January 2020 Consultation, page 3.

<sup>79</sup> [Letter from CityFibre to Ofcom dated 17 February 2021](#), pages 3-4.

2.70 We disagree with the concerns from some of the network operators<sup>80</sup> that our regulations force Openreach to build full fibre to avoid running the copper network at a loss, which could undermine BDUK's procurements<sup>81</sup> by incentivising Openreach to overbuild a BDUK funded network, for the following reasons:

- Our copper retirement regulation allows Openreach to withdraw copper services in circumstances where it would otherwise be required to continue to provide them. However, in cases where it is no longer reasonable for Openreach to be required to provide services, it is a commercial decision for Openreach to withdraw services. While we do not believe our regulations stand in the way of such a decision, we would expect to take measures to support Openreach's decision if it did. Openreach does not therefore face an inevitable cost of continuing to provide services regardless of whether a competitor wins a BDUK contract in an area.
- In areas where Openreach has no commercial case for investment, the successful bid by a competitor for one of the contracts would likely further reduce Openreach's incentives to invest in that area as the resulting network would likely generate lower take-up than without the presence of a competitor.
- As we set out above in relation to Openreach building strategically to deter investment by competitors, were Openreach to subsequently decide to overbuild in an uncommercial area where a competitor had successfully bid, this could be anti-competitive. The Openreach Monitoring Unit plays an active role in deterring such behaviour.

2.71 We also disagree with CityFibre<sup>82</sup> that our regulations do not consider how migration will take place in areas where other networks have deployed full fibre, and that our proposals would not give altnets enough time to achieve sufficient scale to be seen as a viable alternative, which would prevent investment in alternative networks.<sup>83</sup>

2.72 Our copper retirement approach is designed so that Openreach only gets the benefits of relaxation of copper regulation once it has provided ultrafast services to 75% of an exchange area, having given 12 months' notice of doing so. The lifting of the charge control on the copper anchor product will happen a minimum of three years after the first threshold notification. Our measures therefore give a degree of transparency about where and when the relaxation of copper regulation will take effect, and to plan their roll-out and commercial strategies accordingly. This is consistent with our objective to promote network competition.

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<sup>80</sup> County Broadband, page 4; Fern Trading, page 3; INCA, page 6; and Zzoomm, page 4, in their responses to the October 2020 Copper Retirement Consultation.

<sup>81</sup> BDUK is consulting on a programme that includes contracts to deliver connections at pace across large areas where commercial investment is likely but subsidy will be required to complete delivery to the whole area: that is, a subsidy is provided so that commercial rollout is extended to uncommercial parts of these areas. These large areas are formed by combining whole Openreach exchange areas. It also includes contracts for smaller areas, which may not coincide with Openreach exchange boundaries, where no commercial deployment is expected. This was published by DCMS 22 December 2020. [Planning for Gigabit Delivery in 2021](#), [accessed 11 March 2021].

<sup>82</sup> CityFibre response to October 2020 Copper Retirement Consultation, page 7, paragraph 1.25.

<sup>83</sup> We note however that our decision not to set out a third threshold for the regulatory transition from copper to fibre would mitigate this concern.

- 2.73 Our remedies in this review also include specific measures to ensure that Openreach does not use wholesale pricing structures to impede wholesale switching to alternative network operators. Specifically we have set the charge controls in Area 2 in a way that supports investment by competing networks, and we have decided that we will consider proposed commercial terms that may deter new network build as they are notified by Openreach.<sup>84</sup> Where necessary we will intervene to prevent such terms, including through our direction-making powers under SMP conditions.
- 2.74 We have also proposed measures outside of this review to facilitate easier switching at the retail level and enhance consumer awareness of gigabit-capable broadband:
- In February we announced proposals to help landline and broadband customers switch seamlessly across different networks.<sup>85</sup> This would mean that in areas where altnets are present, customers on Openreach’s network can migrate to competing networks with less risk of disruption.
  - We are also considering the recommendations of the Gigabit Take-up Advisory Group (GigaTAG), convened by Which?<sup>86</sup>, that industry and Ofcom should take action to ensure that consumers and businesses understand the capabilities of gigabit-capable broadband, in order to navigate the market effectively. We are planning to engage with industry about the terminology it uses to describe gigabit-capable and other broadband services and the policy options available to us to promote clarity and consistency in the way the industry communicates with customers.
- 2.75 Finally, we disagree that we did not take into account as part of our proposals the effect of our copper retirement policy on the incentives of network competitors. Our impact assessments were integral to the reasoning in our consultations. We set out in our January 2020 Consultation our primary concern that Openreach may be able to deter competitive build in wider areas by targeting exchange areas where competing networks have built or plan to build. In the preceding paragraphs of this Statement, we have discussed the impact of our decisions on network competition. These decisions are part of the package of measures introduced by this market review and their impact has been assessed on that basis.

### Impact on downstream competition

- 2.76 Our copper retirement policy protects the existing model of downstream competition in Area 2 and promotes competition on Openreach’s network in Area 3 by ensuring that there is always wholesale regulation on Openreach to provide fair and reasonable access to its network, a charge control on the anchor product, and non-discrimination regulations. Where regulation is being withdrawn on copper services, these obligations are retained on

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<sup>84</sup> As set out at Section 7, if Openreach uses commercial terms that undermine new network build, our starting point is that they are likely contrary to the interests of customers in the long term. In particular, we have identified loyalty discounts or pricing contingent on large volume commitments as a particular concern. To facilitate us considering such terms, Openreach is required to provide 90 days’ notification of commercial terms where the price or other contractual conditions are conditional on the volume and/or range of services

<sup>85</sup> Ofcom, 2021. [New plans for seamless broadband switching](#), [accessed 11 March 2021].

<sup>86</sup> Gigabit Take-up Advisory Group, 2020. [Interim Report](#), [accessed 11 March 2021].

full-fibre services. We detail in Sections 3 and 4 of this Volume the specific SMP obligations that apply to Openreach.

- 2.77 In addition, we have introduced a period of parallel regulation before the charge control on copper services is withdrawn, to ensure that ISPs have sufficient time to prepare for this change. We have also introduced a system of notifications to provide transparency and certainty on the different stages of the regulatory transition. These measures will smooth the transition for ISPs and so provide conditions which facilitate downstream competition. We explain the process of regulatory transition, and address comments from stakeholders on that process, in more detail below.
- 2.78 Finally, ISPs had a number of concerns about the migration process in general and the potential disruption for customers and businesses. There were also some concerns about our regulations removing the need for Openreach to offer commercially attractive wholesale FTTP prices to encourage rapid migration. We recognise those are important concerns, and that Openreach and ISPs, including ISPs providing wholesale services to other ISPs with a direct relationship with customers, will have to work together to support a smooth migration process for customers. We address those concerns in more detail below.

### **Impact of our proposals on broadband customers**

#### *Concerns about potential price impacts for broadband customers*

- 2.79 Our copper retirement remedies entail pricing flexibility for Openreach on wholesale copper services when the exchange is completed and at least two years have passed since the stop sell. This is part of the process of migration to the improved FTTP services. The amount of any retail price impacts will depend on retail competition, and customers will be protected by our continuing safeguards, in particular the charge controls on the 40/10 FTTP product. In the long run customers will be better served by a future-proof full-fibre broadband, which can deliver the networks people and businesses will rely on for years to come.
- 2.80 We also recognise that the wholesale price difference between standard broadband and full fibre is greater than that between FTTC and full fibre, and customers currently using standard broadband may therefore face a larger increase in retail prices when they migrate to full-fibre services. However, usage of standard broadband is declining rapidly<sup>87</sup> and as it continues to do so, we anticipate that there will be a limited number of customers remaining on standard broadband services and affected by the relaxation of copper regulation.
- 2.81 To the extent that customers do not value higher service quality, many providers offer alternative, affordable services, either on the Openreach network or using other networks or technologies (including mobile), and we expect that they will continue to have a

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<sup>87</sup> In BT's most recent Q3 2020/21 financial results, Openreach reported that 5.2 million connections remain on standard broadband (referred to as non-fibre) with this number having declined steadily at a rate of 2 million per year. BT, 2021. [Q3 2020/21 results](#), [accessed 11 March 2021].

commercial incentive to do so. In addition, we have strongly encouraged providers to consider introducing targeted tariffs designed to make sure that customers on low incomes, or who are otherwise financially vulnerable, can access affordable broadband services. We are keeping affordability issues under review with a view to setting out proposals for further measures, if we consider that necessary.<sup>88</sup>

- 2.82 In all cases, customers will be protected by having a service available that is underpinned by a wholesale service subject to a charge control. In areas where full fibre is available, once stop sell comes into effect in the exchange area, a charge control will apply to the FTTP 40/10 wholesale service and charge control on copper services will remain in place throughout the transition period. Once the charge control on copper services is withdrawn, customers purchasing FTTP 40/10 or higher speeds will be protected in the same way as with the copper charge control prior to its removal.
- 2.83 Where there is no full-fibre service available at a premises, even once the charge control on copper services is removed in other parts of the exchange area (i.e. those where full fibre is available once ultrafast coverage is complete), the charge control on copper services will remain in place until full fibre is made available at that premises.
- 2.84 We also note that the vast majority of landline voice-only customers take their services from BT. Under current Ofcom proposals, these customers would benefit from BT's commitment to continue with an inflation-linked control on the basket of line rental and call charges for voice-only services, regardless of the technology used to deliver the service.<sup>89</sup> More generally, where a voice landline is provided on its own, providers will be able to use Openreach's low bandwidth broadband product, currently priced at the same price as WLR, to carry an IP-based voice service (see Volume 2 Section 9).
- 2.85 We recognise that there may be a tail of customers who are unwilling or unable to engage in the broadband market and switch services before the end of the transition period, even where full fibre is available at their premises. In the case of vulnerable consumers, we set out our expectations below. For other customers, the withdrawal of the charge control on copper services is a mechanism designed to give Openreach commercial freedom to incentivise migration to full fibre through price increases if appropriate. It is therefore possible that some of those customers – consumers, businesses, and CNI providers – would see price increases on their existing services at the end of their contracts.
- 2.86 In relation to the concerns raised by respondents that remote areas may not benefit from full fibre deployment, our copper retirement proposals aim to incentivise commercial build and, where it is a rational commercial decision for Openreach, the completion of an exchange. As noted in Volume 3 Section 1 of this Statement, in June 2020 Openreach committed to build fibre to at least 3.2 million premises in Area 3 by the end of this review period, which is likely to benefit some remote communities and premises.

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<sup>88</sup> Ofcom, 2020. [Affordability of communications services. A summary of initial findings](#), [accessed 11 March 2021].

<sup>89</sup> Ofcom, 2020. [Consultation: Protecting voice-only landline telephone customers](#), [accessed 11 March 2021].

- 2.87 Our regulation also complements public funding programmes. The UK Government is investing at least £1.2bn between now and 2024/25 to subsidise rollout in the hardest-to-reach areas as part of a £5 billion funding commitment. This is alongside other broadband investment programmes from devolved governments in the UK's nations. Finally, the universal service obligations of BT and KCOM are intended to help fill the gap left by broadband rollout programmes, aiming to improve broadband coverage to households and businesses in hard to reach areas.<sup>90</sup>
- 2.88 We do not agree with the concern raised by TalkTalk<sup>91</sup> that our copper retirement regulations remove the need for Openreach to offer commercially attractive wholesale FTTP prices to encourage rapid migration. Our approach to copper retirement is an important part of a package of measures designed to promote investment and network competition. However, this package of measures does not preclude Openreach from setting prices, where it has the flexibility to do so, at a level to attract customers onto its network either to encourage faster or higher take-up. Moreover, the desire to stimulate faster migration to full fibre, threat of competition from other networks and desire to encourage take-up of higher bandwidth services provide Openreach with the incentive to offer commercially attractive wholesale prices.
- 2.89 We also disagree with the concern raised by TalkTalk<sup>92</sup> that the lower Openreach costs that copper retirement regulation allows will not be passed on to customers, as they are captured as extra profit by BT's shareholders rather than resulting in lower prices. The purpose of our copper retirement policy is to incentivise full fibre investment, resulting in consumer benefit in the form of higher quality broadband. We discuss our decisions in relation to price regulation in the WLA markets in Areas 2 and 3 in Volume 4 Sections 1 and 2.

#### *Protecting vulnerable consumers*

- 2.90 As we explain above, investment in full fibre is part of a wider transformation of the UK's telecoms infrastructure. On the Openreach network, this transformation also includes PSTN switch-off, and the migration of all voice services to IP on both copper and full fibre by 2025.
- 2.91 This migration to IP will be straightforward for most customers, whether delivered over a copper or full-fibre connection. However, some may require additional support to help them update their services, for instance, customers with care alarms who will need to have certainty that their alarms will continue to work when they migrate.
- 2.92 We have made it clear that both Openreach and telecoms providers should have processes to protect vulnerable consumers.<sup>93</sup> As noted in our January 2020 Consultation, in February

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<sup>90</sup> Ofcom, 2019. [Delivering the Broadband Universal Service](#), [accessed 11 March 2021].

<sup>91</sup> TalkTalk response to October 2020 Copper Retirement Consultation, page 2.

<sup>92</sup> TalkTalk response to October 2020 Copper Retirement Consultation, page 3.

<sup>93</sup> By vulnerable consumers, in this document, we primarily mean those consumers dependent on their copper line for telecare services and who have not yet been switched to IP, and for whom care alarms may not work over IP services at the time of the full fibre installation. We also have a programme of work engaging with ISPs to ensure reasonable

2019, we set out the roles and responsibilities of different organisations, and our expectations of telecoms providers to ensure a smooth migration to IP.<sup>94</sup> In broad terms, the challenges with migration to IP that we set out in February 2019 and in relation to migration to full fibre that we set out in our statement on the Salisbury and Mildenhall trials apply to the broader copper retirement process.<sup>95</sup>

- 2.93 In June, we formally commissioned the Office of the Telecoms Adjudicator (OTA2) to secure agreement on a best practice guide for migration in the trial areas, which has now been published.<sup>96</sup> This includes the definition and identification of vulnerable consumers, protections for users of care alarms, issues around critical national infrastructure<sup>97</sup> and communications/common messaging. It also sets out guidance on monitoring and reporting<sup>98</sup>, installation processes<sup>99</sup>, and the exception process.<sup>100</sup> The guide is being tested via the Salisbury trial. We are conscious that the guide will continue to be developed as lessons are learnt from the trials and the OTA2 has consulted with industry on the principles which underpin this further development.<sup>101</sup>
- 2.94 We believe that these measures represent a proportionate response to concerns regarding vulnerable consumers, and as set out below, we will monitor the migration process in case there is a need for further intervention.
- 2.95 We agree with the Ombudsman Service that the definition and identification of vulnerable consumers, and the development of processes to protect them for the migration to IP on both fibre and copper services, is the responsibility of the whole industry.<sup>102</sup> However, we expect Openreach to have a key role to play when industry develops measures to migrate vulnerable customers safely or otherwise protect their access to essential services.
- 2.96 We disagree with Atos IT services that our proposals may result in higher prices for vulnerable consumers requiring ongoing access to copper services for the provision of essential services. In those very limited cases where the customer cannot switch because their healthcare device will stop working on a full-fibre connection (e.g. care alarms), we expect ISPs to support those customers for their legacy services appropriately.
- 2.97 In addition, Openreach has offered to commit to continue to provide copper services, at similar prices to those in areas subject to a charge control, to vulnerable consumers

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measures are in place to protect consumers during IP migration, including where consumers may face additional challenges. For instance, IP migration may also affect consumers with a voice-only service, consumers not confident with switching e.g. elderly consumers, who may need extra help, and consumers wanting to call 999 during a power cut who do not have a mobile or who have poor mobile coverage, for whom we expect there to be battery backup available from ISPs (as set out in the obligation to ensure emergency calls).

<sup>94</sup> Ofcom, February 2019. [The future of fixed telephone services](#), [accessed 11 March 2021].

<sup>95</sup> Ofcom, January 2020. Measures to support Openreach's proposed trials in Salisbury and Mildenhall – migrating customers to fibre and withdrawing copper services.

<sup>96</sup> OTA2, 2020. [Trial Best Practice Guide](#), [accessed 11 March 2021].

<sup>97</sup> OTA2, 2020. Trial Best Practice Guide, pages 13-15.

<sup>98</sup> OTA2, 2020. Trial Best Practice Guide, page 5.

<sup>99</sup> OTA2, 2020. Trial Best Practice Guide, pages 9-10.

<sup>100</sup> OTA2, 2020. Trial Best Practice Guide, pages 17-18.

<sup>101</sup> OTA2, 2020. [Draft Industry Principles for All-IP Migration](#), [accessed 11 March 2021].

<sup>102</sup> Ombudsman Service, pages 2-3; and BT, page 14, in their responses to the October 2020 Copper Retirement Consultation.

throughout the current market review period, even when the charge control on copper services has been removed and when full fibre is available to the premises. This would include reconnecting or providing new copper services when a customer becomes vulnerable or who cannot become connected to full fibre due to the need to support services such as telecare alarms.

*Concerns about the migration to IP on both copper and full fibre*

- 2.98 We believe that in general customer needs will be better served in the long run by full-fibre networks. Although we recognise the potential for some customer disruption when migrating from copper to full fibre, the notice period for stop sell and the subsequent period of transition provide time for telecoms providers to inform customers and promote an orderly migration, including for vulnerable consumers.
- 2.99 In relation to concerns about wholesale full-fibre services being available to meet the needs of customers currently on copper services, Openreach customers can engage with Openreach and other providers in the development of new services to meet their needs. Where a replacement service is not yet available by the end of the transition period, pricing of existing services will be a matter for the ISPs to discuss with Openreach.
- 2.100 The provision of suitable communications services to all customers is a shared responsibility between Openreach, other networks, ISPs and the end-customer. In particular, ISPs should actively engage with their CNI customers to identify the right replacement service, be this a full-fibre connection or another technological solution. We expect Openreach to work closely with industry and CNI customers to ensure that wholesale replacement services are made available. We also recognise that eventually some services may no longer rely on an Openreach connection and may be replaced by a mobile or wireless connection, or may be replaced by a service provided by a network competitor.
- 2.101 In relation to ITSPA and Gamma's concerns about ISPs' CPE incompatibility with some over the top (OTT) voice services resulting from the migration to full fibre, this is not within the scope of this review. We recognise that this is an issue of wider concern and we therefore encourage industry discussion and engagement on how it might be resolved.
- 2.102 We acknowledge that some customers will face a process of double migration, whereby they move to an IP-based voice service provided over a copper broadband service, and then over a full-fibre broadband service when it is available. This is driven by the switch-off of the traditional telephony network under the timescales set by industry. It will be important that ISPs and Openreach work together to support a smooth migration to customers. Our copper retirement decisions support that process by providing a notification regime that will provide clarity on the locations where ISPs should expect the regulatory transition from copper to full fibre.

## Regulatory transition from copper to full-fibre services

### Notification regime

- 2.103 We continue to believe that the different stages of the regulatory transition from copper to full-fibre services should be transparent and offer certainty to industry. ISPs, competitors and customers should have sufficient information to plan ahead for the transition from copper-based to full-fibre based regulation. This will help ISPs and customers plan for the migration, and competitors plan for their own commercial activities.
- 2.104 We also believe that a regime of notification would mitigate the concern we highlighted in our January 2020 Consultation that there is a risk that Openreach may rely upon the combination of stop sell and industry expectations that the charge control on copper services will be removed to drive migration, but then not complete ultrafast coverage in an area. We have therefore decided to implement our proposed regime of notifications.
- 2.105 In relation to TalkTalk's concern that Openreach may notify that it will reach 75% ultrafast coverage in 12 months, but then take longer to reach this level of ultrafast coverage, we consider that Openreach will have had sufficient build time in an exchange to have reasonable certainty on when it will reach the threshold. Openreach also has an incentive to complete exchanges to benefit from the charge control on copper services being lifted, and to deploy at pace.
- 2.106 In addition, we do not believe that there should be further conditions imposed on the timescale for notification. Although we do not expect this to happen in the vast majority of exchanges, it is possible that there may be unforeseen circumstances in the next five years that could prevent build in a minority of exchanges, even with prior good progress.
- 2.107 However, we agree that further transparency on Openreach's build progress in notified exchanges would help increase certainty for industry that the threshold will be reached and the stop sell will apply. We agree that it is important that stakeholders are clear about the implementation of the regulatory transition from copper to full-fibre services. Openreach is already providing regular information on the Salisbury trial to the OTA IP Steering Board. In addition, Openreach has voluntarily decided to provide update status for stop sell exchanges and is considering the form that those updates will take. We have also decided to request regular information on full fibre coverage in notified exchanges, which will complement other information we will collect as discussed below.

### First threshold

#### *Coverage threshold*

- 2.108 We have decided that it is appropriate to set the coverage threshold for triggering stop sell at 75% ultrafast coverage in the exchange area. Stakeholders broadly accept that there will be more challenging premises to reach in each exchange area but that 75% coverage should be achievable and the timescales of doing so broadly predictable. It is important that the first threshold is reasonably achievable, so that our regulatory approach in respect of the migration from copper to full fibre encourages investment.

- 2.109 Stakeholders' concerns about the first threshold primarily revolve around what impact it may have on the incentives on Openreach to continue to deploy full fibre beyond this threshold. We agree that there is a potential concern that Openreach may not want to build to some of the remaining 25% of premises, as some of those premises are likely to be more expensive to serve. The conditions we set for the second threshold and the removal of the charge control on copper services, as set out in Table 2.5 below, are intended to address this concern.

*Two-year transition period of parallel regulation*

- 2.110 We are satisfied that the minimum two-year transition period between stop sell and the lifting of the charge control on copper services strikes an appropriate balance between facilitating migration and protecting customers, and in particular vulnerable consumers. A transition period of this length is in line with the permitted maximum residential contract term<sup>103</sup> and so supports voluntary migration as customers change contracts. In addition, prior to the transition period, Openreach is required to give a one-year notification before the stop sell can take effect. This will give ISPs time to prepare for migration and in some cases migrate customers before the stop sell comes into effect, and means that they have at least three years' notice before the charge control on the copper anchor service is lifted.
- 2.111 In addition to natural churn, we anticipate that ISPs will have an incentive to migrate their existing customers proactively during the transition period to avoid the prospect of price rises on wholesale copper services.
- 2.112 While the length of the transition period involves an element of judgement, we do not believe that a one-year migration period, as proposed by Openreach<sup>104</sup>, would give sufficient time for ISPs to communicate with and migrate all their customers at scale, and we would be particularly concerned in relation to those customers who may have complex needs, such as vulnerable consumers and some businesses. Conversely, on balance we do not consider it necessary to have a transition period of three years given that providers will typically contact all customers within the maximum residential contract term of 24 months and have ample opportunity to engage with all customers in this time.
- 2.113 We recognise the concerns highlighted by Gamma<sup>105</sup> that business telecoms contracts are often longer-term, and more complex to migrate than residential customer contracts, in some cases with voice and broadband services purchased from separate suppliers. We believe that it is important that business ISPs prepare for the migration as early as possible, especially as they already need to prepare for the withdrawal of WLR and the nationwide PSTN switch-off. However, we believe that a transition period of two years plus the additional year from the notification of the stop sell provides sufficient time for business providers to migrate their existing customers before Openreach is able to increase its prices.

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<sup>103</sup> Under General Condition C1.4

<sup>104</sup> Openreach response to October 2020 Copper Retirement Consultation, page 3.

<sup>105</sup> Gamma response to October 2020 Copper Retirement Consultation, paragraph 56-58.

2.114 TalkTalk proposed that Openreach should be subject to additional operational readiness requirements before the stop sell could be implemented.<sup>106</sup> We agree that Openreach needs to be able to offer the right services and processes to support the migration, otherwise telecoms providers cannot migrate their customers. However, we do not believe that we should impose additional requirements in relation to operational readiness. Openreach has a strong incentive to make the migration experience smooth and effective because ultimately it would benefit from stronger customer demand to take up full fibre, and we believe that the notification and transition period provide sufficient time to address issues that arise.

### Second threshold

2.115 We have decided that the appropriate trigger for the withdrawal of the MPF and FTTC 40/10 charge controls is when Openreach has completed an exchange for the purposes of the second threshold. We will consult separately on the circumstances in which premises can be excluded from the definition of a completed exchange.

2.116 This will provide some incentive to Openreach to extend ultrafast coverage beyond 75% and to harder-to-reach premises. In relation to exchange completion, Openreach has told us that its ambition within its Towns and Cities programme remains to maximise FTTP coverage of each exchange where it builds, at the earliest opportunity.

2.117 We discuss above why we also consider that the second threshold reduces Openreach's incentive to target coverage to frustrate network competition.

### Third threshold

2.118 We have decided that it is too early within this market review period to set a third threshold to define the conditions under which the remaining regulation of copper services would be withdrawn. Accordingly, there will be no further deregulation of existing copper services in this market review period after the second threshold is met, triggering the removal of the charge control on copper services where full fibre is available.

2.119 Eventually, we expect full fibre deployment to lead to the complete retirement of the copper network. It is important that ISPs and their customers, and in particular CNI customers, make plans well ahead of the end of the market review period to prepare for the move to full fibre where available and, prior to this, the migration of traditional telephony services to IP-based voice services. The transformation of the telecoms infrastructure that will happen during this market review period is a significant undertaking by industry, involving the migration of millions of lines and in some cases the application of complex alternative solutions, and we expect ISPs and CNI customers to engage early in that process.

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<sup>106</sup> TalkTalk response to January 2020 Copper Retirement Consultation, page 107; TalkTalk response to October 2020 Copper Retirement Consultation, page 3.

- 2.120 Nonetheless, having taken into account stakeholders' responses, we are of the view that putting in place a third threshold is not appropriate at this stage.
- 2.121 The third threshold we proposed could only have had a limited impact in this market review period, as the conditions for the third threshold could only have been met at most in the exchanges where the stop sell has been notified before 31 March 2021, and would then only come into effect during 2025. Nonetheless, in making the proposal, we considered that a third threshold allowing for full deregulation could provide an additional incentive for Openreach to complete ultrafast coverage in an exchange. We also said that by setting the conditions for full deregulation we would provide regulatory certainty.
- 2.122 However, it appears unlikely that these objectives will be met. Openreach has said that our proposed conditions for deregulation will have the practical effect of making copper retirement impossible and risks sending the wrong signals regarding the need to migrate. Openreach believed it would be better for Ofcom not to set this threshold now.<sup>107</sup>
- 2.123 If there is little realistic prospect of our proposed conditions for complete deregulation being met during this market review period, despite Openreach's progress in notifying exchanges to implement the stop sell,<sup>108</sup> it is doubtful that a third threshold will provide an effective incentive for Openreach or provide any certainty about when full deregulation might occur.
- 2.124 We have also taken account of stakeholders' concerns about the complete deregulation of copper services within this market review period.<sup>109</sup>
- 2.125 We do not consider that we should lower the proposed conditions for achieving complete deregulation. This is because, as we explained in our October 2020 Copper Retirement Consultation, we want to ensure that copper regulation is not removed too quickly, to minimise the risk of harm to consumers because of the removal of services relied upon by vulnerable customers or CNI. In addition, most stakeholders supported our proposed conditions to be met before the complete deregulation of MPF and FTTC.
- 2.126 Finally, by the time Openreach might be able to benefit from full deregulation (at least in principle), our expectation is that we will be consulting on our proposals for regulation in the next market review period, 2026-31. At this point, we will have the advantage of having seen the migration process in practice and the outcome of the Openreach trials, which will help to inform us as to what might be the appropriate conditions for full deregulation in the next market review.
- 2.127 We therefore disagree with Openreach's view that we should retain the flexibility to define the threshold during the lifetime of the WFTMR market review period as more information

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<sup>107</sup> [Openreach letter on copper retirement dated 3 March 2021](#), pages 1 and 3.

<sup>108</sup> Openreach has now notified the stop sell in 220 exchanges, covering approximately 2.2m premises.

<sup>109</sup> While we disagree with CityFibre's general concerns about our copper retirement policy, a decision not to proceed with the third threshold would mitigate their concern about the pressure it puts on alternative network competitors to achieve sufficient scale within this market review period.

becomes available. Further, we consider that this would not provide sufficient regulatory certainty about the regulatory transition from copper to fibre services.

- 2.128 Having considered all these factors in the round, we have decided not to set a third threshold allowing for full deregulation in this review period. Stakeholders will have regulatory certainty that we will not withdraw the requirement to provide fair and reasonable access to existing MPF and FTTC services, and associated conditions during the market review period. However, while we are not allowing full deregulation of copper services during this review period, we still regard it as the inevitable consequence of copper retirement and expect to address it in the next market review period (2026-31).
- 2.129 Given our decision not to introduce a third threshold, we do not consider it is necessary to address stakeholders' more detailed comments on our proposed conditions to be met before deregulation, or the exclusion of CNIs from our proposals.

### Technical issues arising from notification regime

- 2.130 For the reasons set out below we confirm our approach to defining exchange completion, as set out in our January and June 2020 Consultations.

#### Defining complete ultrafast coverage in an exchange

##### *Defining baseline premises in an exchange*

- 2.131 In our January 2020 Consultation, we defined the baseline for the calculations of ultrafast coverage as including those premises that exist at the time of the stop sell notification in an exchange and which are still premises when coverage is measured, i.e. not new build after the start of the deployment. For those premises built after the start of full fibre deployment by Openreach, we expect network operators in most cases to deploy full fibre.
- 2.132 For the purpose of calculating the number of premises in the exchange, we define the start of the roll-out as the day when Openreach issues a 12-month notification prior to reaching the first threshold in the exchange. For any premises to be counted as having ultrafast coverage, an ultrafast service should be available to be ordered for those premises and subject to the normal service level agreements and quality of service standards.
- 2.133 We did not receive any comments on our proposed approach to defining a baseline number of premises at the exchange. We therefore confirm our proposal.

##### *Definition of coverage*

- 2.134 In relation to ultrafast coverage, we addressed concerns regarding the inclusion of ultrafast G.fast in our calculations of exchange completion and coverage thresholds in our October 2020 Copper Retirement Consultation.<sup>110</sup> We do not consider that responses to our October 2020 Consultation substantively challenge our original rationale.

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<sup>110</sup> October 2020 Copper Retirement Consultation, page 7.

- 2.135 In response to the concern that Openreach will build a significant number of new G.fast connections to the detriment of full-fibre connections, our response remains as we set out in our October 2020 Consultation: that this is not a credible risk given the scale of Openreach’s commitment to full fibre deployment, and the limited circumstances in which G.fast can meet the 300Mbit/s required. Furthermore, in practice, Openreach has publicly paused its G.fast deployment, given the focus on full fibre.<sup>111</sup> Finally, we continue to believe that G.fast may benefit consumers by providing ultrafast services where Openreach is not able to deploy full fibre.
- 2.136 Our decision to deregulate the Wholesale Fixed Analogue Exchange Lines (WFAEL) and Integrated Services Digital Network (ISDN) markets (as set out in Volume 2 Section 9) means that WLR and ISDN services are completely deregulated from 1 April 2021. However, those services are subject to a commitment by Openreach, which will continue to provide new WLR and ISDN services until September 2023 and existing WLR and ISDN services until December 2025, unless the services are provided in exchange areas in relation to which a first threshold notice has been published. In the case of exchanges in relation to which a first threshold notice has been published before September 2023, Openreach will no longer provide new WLR or ISDN services to premises where full fibre is available.
- 2.137 Leased lines are out of scope of our copper retirement proposals. Table 2.5 below sets out in more detail the impact of the regulatory transition on specific regulated services.

### Defining exchange completion

- 2.138 An exchange is ‘complete’ for the purposes of the second threshold when all premises have ultrafast available, except those that meet criteria that we define for exceptions.
- 2.139 We accept that there will be premises where it will be too difficult for Openreach to reasonably make ultrafast services available under its commercial programme. In defining criteria for exceptions we balance the need for certainty, for Openreach to reasonably be able to achieve exchange complete and for Openreach to be required to roll out as broadly as possible in an exchange area.
- 2.140 At this early stage of roll-out there is not sufficient information available on the difficult cases and the extent to which difficulties can be overcome. Were we to set criteria now there is a significant risk that we would either set the exceptions bar too high or too low, and in doing so either make it too difficult for Openreach to achieve exchange completion and hence reduce its incentive to build beyond 75% or at all, or result in too many premises being left without ultrafast services available.
- 2.141 We plan to consult on proposed criteria for exceptions when Openreach’s roll-out has progressed further and more information on difficult cases becomes available.
- 2.142 In relation to stakeholder calls for monitoring of non-fibre ultrafast, as Openreach rolls out full fibre nationally, and reaches exchange completion, we will monitor both the numbers

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<sup>111</sup> Openreach response to January 2020 Consultation, page 19, footnote 6.

of ultrafast and full fibre enabled premises as part of our ongoing monitoring regime, as set out later in this chapter.

#### *Overview of our calculation of the copper retirement thresholds*

2.143 In summary, our decision in relation to the definition of ultrafast coverage in an exchange are:

- The first and second coverage threshold will be assessed by reference to the baseline number of premises existing in the exchange at the time of the stop sell notification.
- Ultrafast G.fast connections are taken into account in the calculation of ultrafast coverage for the first and second threshold.
- Premises relate to premises where people live or work, rather than street furniture or other non-premises infrastructure (which may currently be served by a copper connection) such as traffic lights.

2.144 We illustrate how the first and second threshold should be calculated below.

**Table 2.1: Calculation of the first and second threshold**

	Denominator	Numerator
<b>First threshold: 75% ultrafast coverage</b>	All premises in the Openreach exchange area <sup>112</sup> at the time of the stop sell notification (minus premises no longer existing at the date of calculation if relevant).	All premises where Openreach ultrafast services are available to be ordered and consumed by the customer.
<b>Second threshold: complete ultrafast coverage</b>	All premises in the Openreach exchange area at the time of the stop sell notification (minus premises no longer existing).  Minus premises that meet the criteria that we have directed to be excluded on the basis that Openreach is unable to deploy ultrafast services because of exceptional circumstances.	All premises where Openreach ultrafast services are available to be ordered and consumed by the customer.

## Monitoring regime

2.145 The next five years will see a significant transformation of broadband infrastructure and the migration of people and businesses onto new, more reliable, high quality full-fibre networks. In that context, it will be important for Ofcom to monitor both full fibre roll-out and the consumer impact of this roll-out through our existing programmes of information

<sup>112</sup> In the area they would be connected to the exchange, that is to say, including premises which are not connected to an Openreach connection.

requests and monitoring. In addition to our current programmes of information gathering, we will also seek specific evidence to oversee the implementation of our copper retirement policy.

- 2.146 We have decided to implement our proposals to seek information from Openreach on exempted premises. We had no response from stakeholders on those specific proposals and continue to believe this information is necessary for the implementation of our copper retirement policy. Table 2.2 below sets out the information we will collect from Openreach altogether as part of our copper retirement monitoring; this may evolve as migration progresses.
- 2.147 We also intend to ask Openreach for more detailed information, similar to the information collected for the Salisbury trial, for the first 117 exchanges where Openreach notified the stop sell. We expect that the Salisbury trial will provide valuable lessons on providers' and customers' perspective of full fibre migration, but by definition this learning will be limited. Extending the information we will request to the roll-out in the 117 exchanges, in particular in relation to vulnerable consumers, will enable us to monitor lessons from the migration more effectively. We set this out in Table 2.2.
- 2.148 As part of the IP migration programme, we request (informally and, in future, under statutory powers) information from the main ISPs on IP-based services migration. We will extend this request to full-fibre services more generally, so that we monitor customers' experience of the full fibre roll-out.

**Table 2.2: Monitoring information from Openreach for copper retirement**

Scope	Frequency	Type of information
<b>First 117 stop sell exchanges</b>	Monthly	As below, plus quality of service information on installations and repairs, and information relating to vulnerable consumers where available (number of times installations have been delayed because of the identification of a vulnerable consumers, restoration of service)
<b>Notified exchanges</b>	Once: when the exchange is notified	Baseline: number of premises in the exchange
<b>Notified exchanges</b>	Quarterly	Number of premises where full fibre is available  Number of premises where an ultrafast G.fast service is available

Scope	Frequency	Type of information
Stop sell exchanges	Quarterly	As above
	Quarterly	<p>Number of premises which have taken up a full-fibre connection</p> <p>Number of premises which have taken up an ultrafast G.fast connection</p>
	18, 21 and 24 months after 75% ultrafast coverage is reached, and (if different) at exchange completion.	Number of premises where Openreach has not been able to deploy full fibre in total and in each category of exemption

- 2.149 This information will be complemented by our existing data gathering. Our Connected Nations report will continue to monitor the availability and take up of full-fibre services overall. Our Quality of Service monitoring will continue to provide nationwide information on full-fibre installations and repairs. The Openreach Monitoring Unit will continue to monitor where Openreach full-fibre build has overlapped with other networks, as part of its performance indicators of the implementation of the BT commitments.<sup>113</sup> We will continue to engage with main ISPs<sup>114</sup>, industry groups and other relevant stakeholders through our IP migration programme on the roll out of IP-based voice services and the potential customer impact of the migration to IP-based services.
- 2.150 As mentioned in our January 2020 Statement on measures to support the Salisbury and Mildenhall trials, we will also monitor the progress of the trials.<sup>115</sup> We have already started our monitoring through regular data returns from Openreach and the main ISPs, and stakeholder engagement through bilateral meetings and attendance of industry groups. We are also planning consumer research in the trial areas.
- 2.151 In relation to how we will monitor Openreach's price commitment for vulnerable consumers, the first step is for ISPs to take this forward as part of their own considerations of how to support vulnerable consumers. We do not propose to monitor the application of this price commitment proactively, but instead rely on ISPs to flag if this commitment from Openreach is not fulfilled. In relation to monitoring industry's communications with customers, this is primarily a matter for ISPs. As part of our IP migration programme, we will continue to engage with providers to understand how they identify and inform vulnerable customers of the change in service.

<sup>113</sup> Ofcom, 2020. [Delivering a more independent Openreach - Annual Monitoring Report](#), [accessed 11 March 2021].  
Period 1 April 2019 to 31 March 2020

<sup>114</sup> BT (Consumer and Enterprise), Sky, TalkTalk, Virgin Media and Vodafone.

<sup>115</sup> Ofcom, 2020. Measures to support Openreach's proposed trials in Salisbury and Mildenhall – migrating customers to fibre and withdrawing copper services, Statement.

2.152 In relation to auditing the information that Openreach is providing, we do not believe this is necessary. The relevant information will be requested using our statutory information gathering powers under Section 135 of the Act. Under Sections 138 to 144 of the Act, Ofcom may (among other things) impose financial penalties of up to £2,000,000 and a daily penalty of £500 per day where a company fails to comply with a request for information. It is also an offence to provide false information in response to a statutory request for information. Ofcom takes compliance with information requests very seriously and a failure to provide complete or accurate information may therefore result in enforcement action being taken by Ofcom. As such, we consider that Openreach would be appropriately incentivised to provide complete and accurate information.

## Summary of our decisions

- 2.153 We have decided to implement our proposals as set out in the January 2020 Consultation and the June 2020 Consultation. Accordingly:
- Openreach will be able to stop sell new copper services in exchanges where it has reached 75% ultrafast coverage, for premises where full fibre is available.
  - The charge control on the anchor copper service, FTTC 40/10 + MPF, will be withdrawn and the FTTP charge control will apply, in exchanges where ultrafast coverage is complete, and where a minimum of two years has elapsed since the stop sell. This applies to all premises where full fibre is available, including CNI premises.
  - We recognise that some premises may not be able to receive ultrafast services due to circumstances beyond Openreach's control. Where this is the case, those premises will not count towards the definition of exchange completion. We will consult on the circumstances under which some premises may be excluded following on from the conclusion of the WFTMR. We provisionally plan to do this early 2022, but this will depend on whether there is sufficient evidence on difficult to reach premises.
- 2.154 We explain how we implement these decisions in Sections 3 and 5 which follow. We set out how these decisions meet the relevant legal tests set out in the Act in Section 8.
- 2.155 We have decided not to implement our proposals as set out in the October 2020 Copper Retirement consultation. As we have decided it is too early in the migration process to define the conditions that should trigger the complete deregulation of copper services, we have not set a third threshold for the removal of the remaining regulation on copper services in the forthcoming market review period.
- 2.156 We summarise our final decisions on the transition from copper to full-fibre services of the regulation of Openreach wholesale services decisions in Table 2.3 below.

Table 2.3: Summary of copper retirement decisions (Areas 2 and 3)

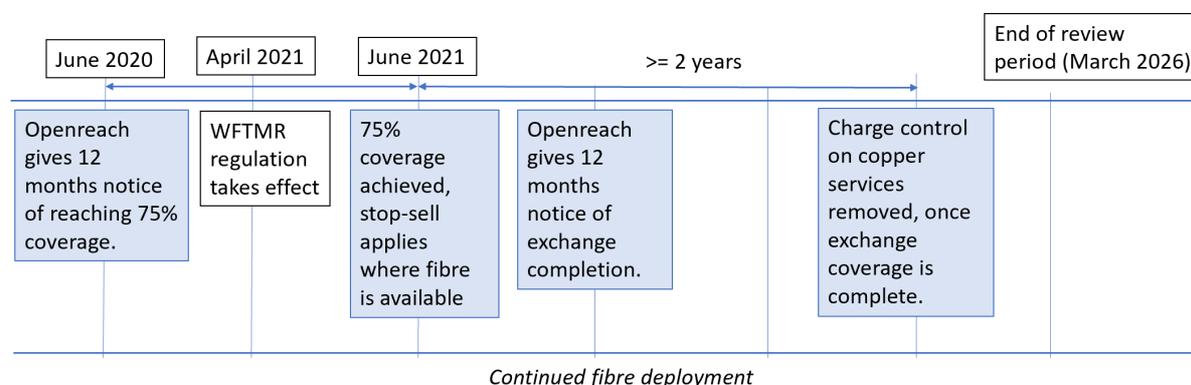
	Conditions to be met	Deregulation	Example of first 117 exchanges <sup>116</sup>
<b>First Threshold</b>	75% of exchange has ultrafast coverage  12-month notification required prior to implementation <sup>117</sup>	“stop sell” of new provides of WLA services where FTTP is available.  No change to WLA copper services regulation where FTTP is not available.  Parallel running of charge controls on FTTC 40/10 and FTTP 40/10	Stop sell could apply from June 2021
<b>Second Threshold</b>	Exchange ultrafast complete + minimum of two years after stop-sell  12-month notification required prior to implementation	In addition to stop sell, charge control on FTTC 40/10 removed at premises where FTTP is available.  No change to WLA copper services where FTTP is not available.	Copper charge control could be removed from June 2023.

2.157 The different stages of copper retirement in this market review period are illustrated below, taking as an example the first 117 exchanges in which Openreach notified the stop sell in June 2020.

<sup>116</sup> This refers to the first tranche of exchanges (minus the trial exchange at Salisbury) notified of stop sell by Openreach in June 2020. Openreach, 2020. [GEN042/20 Notification of product stop sells in an additional 117 FTTP upgrade exchanges](#), [accessed 11 March 2021]; and ISPreview, 13 May 2020. [Openreach to Stop Selling Copper Phone in 118 Areas – Go FTTP](#), [accessed 11 March 2021].

<sup>117</sup> The complete list of required notifications is available later in this chapter.

Figure 2.4: Timeline for regulatory transition from copper to full fibre – example of the first 117 exchanges



2.158 Finally, Table 2.5, below, summarises the withdrawal of copper regulation at each of our thresholds across relevant technologies.

Table 2.5: Summary of decisions where regulatory obligations will change with copper retirement

	Scenario	Start of regulation	First threshold (75% ultrafast)		Second threshold (100% ultrafast/exemption)		
			Premises where FTTP is not available	Premises where FTTP is available	Exempted premises with no form of ultrafast	Premises where FTTP is not available	Premises where FTTP is available
MPF and SLU Products	"Requests for new forms of copper access"	No NA: migration No CC	No NA: migration No CC	Stop sell	No NA: migration No CC	No NA: migration No CC	Stop sell
	MPF	NA CC	NA CC	Stop sell CC	NA CC	NA CC	Stop sell No CC F&R: terms
	SLU	NA No CC	NA No CC	Stop sell No CC	NA No CC	NA No CC	Stop sell No CC F&R: terms
VULA Copper Products	"Requests for new forms of copper access"	No NA: migration No CC	No NA: migration No CC	Stop sell	No NA: migration No CC	No NA: migration No CC	Stop sell
	40/10 FTTC; SOGEA; G.fast; and SOG.fast	NA: FTTC/ G.fast NA: SOGEA/ SOG.fast CC: FTTC/ SOGEA	NA: FTTC/ G.fast NA:SOGEA/ SOG.fast CC: FTTC/ SOGEA	Stop sell CC: FTTC/ SOGEA	NA: FTTC/ G.fast NA:SOGEA/ SOG.fast CC: FTTC/ SOGEA	NA: FTTC/ G.fast NA:SOGEA/ SOG.fast CC: FTTC/ SOGEA	Stop sell No CC F&R: terms

	<b>Other FTTC; SOGEA; G.fast; and SOG.fast</b>	NA: FTTC/ G.fast  NA: SOGEA/ SOG.fast  No CC	NA: FTTC/ G.fast  NA:SOGEA/ SOG.fast  No CC	Stop sell   No CC	NA: FTTC/ G.fast  NA:SOGEA/ SOG.fast  No CC	NA: FTTC/ G.fast  NA:SOGEA/ SOG.fast  No CC	Stop sell   No CC F&R: terms
<b>VULA Fibre Products</b>	<b>"New forms of access"</b>	NA No CC	NA No CC	NA No CC	NA No CC	NA No CC	NA No CC
	<b>FTTP 40/10</b>	NA CC: variant	NA CC: variant	NA CC: variant	NA CC: variant	NA CC: variant	NA CC: variant
	<b>FTTP other</b>	NA No CC	NA No CC	NA No CC	NA No CC	NA No CC	NA No CC

**Key to Table 2.5**

*NA: Network access obligation applies, which includes fair and reasonable terms, conditions and (unless there is a charge control) charges.*

*NA: FTTC/G.fast - Network access obligation applies to FTTC or G.fast. Fair and reasonable terms, conditions and charges when CC does not apply. Fair and reasonable terms and conditions but not charges when CC applies.*

*NA: SOGEA/SOG.fast - Openreach can provide SOGEA/SOG.fast instead if requested by a telecoms provider but cannot refuse access to FTTC/G.fast. Where Openreach does not provide SOGEA/SOG.fast, this can be subject to an access request under the general access obligation.*

*No NA: migration - No general or specific network access obligation in relation to copper, except for new copper services enabling FTTP and SOG.fast migration which is provided on fair and reasonable terms, conditions and charges.*

*No NA: No general or specific network access requirement.*

*Stop Sell: Stop sell on new requests (no change to existing services).*

*CC - Charge control applies.*

*CC: FTTC/SOGEA - Charge control applies on FTTC/SOGEA or, if not available, on G.fast/SOG.fast.*

*CC: variant - Charge control applies where network access to VULA copper not available or not required.*

*No CC - No charge control.*

*F&R: terms – for existing services, F&R applies to terms and conditions but not to charges.*

## 3. General remedies: physical infrastructure, WLA, LL Access and IEC markets

- 3.1 In this section, we set out the general remedies that we have decided to impose on Openreach, to address the competition concerns that we have identified in our market assessment (Volume 2) and in line with our approach to remedies (Section 1).
- 3.2 The general remedies require Openreach to provide network access and impose supporting obligations in the markets where we have identified BT as having SMP. These are the markets for physical infrastructure in the UK outside the Hull Area, WLA in Area 2 and Area 3, LL Access in Area 2, Area 3 and the HNR Area, and IEC at BT Only and BT+1 exchanges (which we refer to collectively as the relevant fixed telecoms markets).

**Table 3.1: Summary of the general remedies**

General remedies
Requirement to provide network access on reasonable request
Requirement to publish and operate a process for requests for new forms of network access (SoR)
Requirements for equivalence of inputs (EOI) and no undue discrimination (NUD)
Requirement to publish a Reference Offer (RO)
Requirement to notify changes to charges, terms and conditions
Requirement to notify technical information
Requirement for quality of service (QoS)
Regulatory financial reporting

- 3.3 For each requirement, we summarise our consultation proposals and stakeholders' responses, and explain our decisions, including the form of remedy which we impose in each market and the extent to which that remedy should apply. This includes how the general remedies apply in the WLA markets reflecting our decisions on copper retirement.

### Requirement to provide network access on reasonable request

#### Our proposals

- 3.4 For each of the relevant fixed telecoms markets, we proposed that Openreach must offer network access where a third party reasonably requests it, and must do so on fair and reasonable terms and conditions, as soon as it is reasonably practicable. We said that this obligation should include a requirement for Openreach to provide network access at fair

and reasonable charges where there is no charge control<sup>118</sup> or where no basis of charges obligation applies. We also proposed that this obligation includes the power for Ofcom to make directions in order that we can secure the supply of services and, where appropriate, fairness and reasonableness in the terms and conditions (and in certain circumstances, also the charges) of network access.

## Stakeholder responses

- 3.5 The majority of stakeholders that commented on this issue agreed with our proposal.<sup>119</sup>
- 3.6 However, Openreach and the CWU raised concerns with the proposed requirement to provide network access on reasonable request.
- 3.7 With respect to the proposed network access obligation in the physical infrastructure market, Openreach argued that Ofcom should focus on making the ATI Regulations<sup>120</sup> fit for purpose. It said our proposals would risk distorting the physical infrastructure market as Openreach would be the preferred provider of physical infrastructure. Openreach argued that this would result in unnecessary duplication of civil infrastructure and increase its costs. Further, Openreach argued that disincentivising the use of the ATI Regulations through imposing network access obligations is likely to distort evidence informing future market reviews to falsely give the impression other physical infrastructure is unsuitable for fibre network development.<sup>121</sup>
- 3.8 The CWU raised concerns over health and safety, calling on Ofcom to remind operators of their responsibilities in this regard when relying on network access provided by Openreach. The CWU also said Ofcom should include transparency of health and safety standards as part of its regulation of Openreach.<sup>122</sup>

## Our reasoning and decisions

- 3.9 We remain of the view that our network access obligation is appropriate and proportionate in relation to BT's market power in each of the relevant fixed telecoms markets.
- 3.10 The level of investment required by a third party to replicate Openreach's physical infrastructure, or its WLA, LL Access and/or IEC networks, and the time it would take to do this, are significant barriers to entry. An obligation requiring Openreach to provide network access where a third party reasonably requests it is therefore vital to promoting and

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<sup>118</sup> This includes cost-based charge controls and price caps.

<sup>119</sup> BT, Annex 9, pages 59-60; BUUK, page 7; CityFibre, paragraphs 5.84, 5.96 and 5.97 (in relation to the WLA, LL Access and IEC markets); Cumbria County Council, pages 5-6; Gigaclear, paragraphs 96-98; [INCA](#), paragraph 157; Openreach, paragraphs 6.89, 6.91, 6.123 and 7.73 (in relation to the physical infrastructure and LL Access markets); [PAG](#), paragraphs 6.9-6.11; Scottish Government, page 3; SSE, page 3; TalkTalk, paragraph 6.84 and Table 7.5 (in relation to the WLA, LL Access and IEC markets); [Telefonica](#), page 29; [3<] [a confidential respondent], page 5; and [3<] [a confidential respondent], page 5, in their responses to the January 2020 Consultation.

<sup>120</sup> [Statutory Instrument 2016 No. 700, Electronic Communications - The Communications \(Access to Infrastructure\) Regulations 2016](#), [accessed 11 March 2021].

<sup>121</sup> Openreach response to the January 2020 Consultation, paragraphs 6.92-6.99.

<sup>122</sup> [CWU](#) response to the January 2020 Consultation, paragraphs 30-31.

protecting competition in downstream markets. Without such a requirement BT would have the incentive and ability to refuse access in each relevant fixed telecoms market or provide access on less favourable terms, thereby benefiting its own retail divisions and hindering downstream competition, ultimately against the interests of consumers.

- 3.11 Our network access obligation in each relevant fixed telecoms market includes an obligation on Openreach to provide any ancillary services that are necessary to make effective that network access. We note that certain ancillary services, such as accommodation and Cablelink, may be used to support network access in multiple relevant fixed telecoms markets. We consider that the obligations we are imposing allow telecoms providers the flexibility to use ancillary services across each relevant fixed telecoms market in which Openreach is required to provide such access, i.e. cross-market. In addition, to facilitate transparency, we expect Openreach's product pages to provide clear signposting and clear naming of available ancillary services within a given market and, for clarity, of ancillary services that may be used to support access in multiple relevant fixed telecoms markets. See below for our decisions on the requirement for publication of a Reference Offer.

#### **The ATI Regulations do not address our competition concerns**

- 3.12 We disagree with Openreach's argument that the ATI regulations negate the need for a network access obligation in the physical infrastructure market.
- 3.13 We acknowledge that the ATI Regulations could potentially support our policy objectives. However, as we set out in Volume 2 Section 3 of this statement, the ability to access non-BT infrastructure (both telecoms and non-telecoms infrastructure) is not an effective constraint on BT's SMP in the physical infrastructure market and the consequential market power in downstream markets. Therefore, access to such infrastructure under the ATI Regulations would not address our competition concerns in the relevant fixed telecoms markets.
- 3.14 In relation to whether the ATI Regulations can be relied upon to ensure effective access to BT's physical infrastructure, our view (as set out in the PIMR 2019) is that:
- a) The ATI Regulations are conceived as a means of facilitating commercial agreements for access on fair and reasonable terms, with Ofcom providing dispute resolution in the event no agreement can be reached. A general network access obligation provides greater certainty in that it forms a basis for the specification of the nature and terms of access to BT's physical infrastructure up front. Such certainty is essential to ensure a network access remedy is effective and is not provided by the ATI Regulations.
  - b) We do not agree that the rights and obligations established in the ATI Regulations are sufficient to encourage network deployment at scale based on access to BT's physical infrastructure. For example:
    - i) Although telecoms providers can refer disputes to us under the ATI Regulations, the lack of certainty in an ex post dispute resolution process is likely to act as a

barrier to relying on the ATI Regulations as the means to access BT's physical infrastructure to deploy a network at scale.

- ii) Although the ATI Regulations enable telecoms providers to obtain existing information held about the infrastructure, the regulations do not require information to be provided in a format other than that in which that information is already held, which is unlikely to be easily adaptable for telecoms purposes.
- iii) While there may be some scope to develop operational processes or detailed timescales through the access terms and conditions that might be imposed under the ATI Regulations, the extent to which these could be specified is likely to be much more limited than under the telecoms *ex ante* framework.
- iv) There is uncertainty as to the prices that will be charged for access under the ATI Regulations. Under the ATI Regulations, there is a range of factors which we must consider in resolving a dispute and the precise approach will depend on the specific circumstances of each dispute. This makes the price uncertain for widescale deployment.
- v) The ATI Regulations do not include any explicit obligations to prevent vertically integrated infrastructure operators from discriminating between their own downstream businesses and other telecoms providers when providing access.

3.15 We are aware that the UK Government is undertaking a review of the ATI Regulations to “assess if there are improvements that could be made to the regulations to further boost investment in infrastructure, and encourage the use of infrastructure sharing to deploy telecoms networks”.<sup>123</sup> However, we consider the ATI Regulations to be complementary to network access obligations rather than a substitute and we do not expect that any potential changes arising out of this review would change this position. The government has also recognised that other forms of physical infrastructure tend to be unsuitable for the deployment of telecoms infrastructure and recognises the primacy of Ofcom's proposed network access obligation in these instances.<sup>124</sup>

3.16 We disagree with Openreach that this remedy will increase the risk of distorting the competitive dynamics in the physical infrastructure market. As set out above, the ATI Regulations are not sufficient to address the competition concerns we have identified. We therefore see the SMP regulation imposed with this statement and the ATI Regulations as complementary. In our guidance under the ATI Regulations, we explain how the ATI Regulations interact with SMP regulation.<sup>125</sup> We explain that the aims of the ATI Regulations and SMP regulation differ.

3.17 We do not consider that there is a material risk that our approach will result in unnecessary duplication of civil infrastructure. Our regulation seeks to reduce the need to duplicate BT's physical infrastructure as it minimises the reliance on self-build by

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<sup>123</sup> [DCMS](#), 12 June 2020. Review of the Access to Infrastructure Regulations, Section 1.2.

<sup>124</sup> [DCMS](#), 12 June 2020. Review of the Access to Infrastructure Regulations., Section 3.3.

<sup>125</sup> [Ofcom](#), 2016. *Guidance under the Communications (Access to Infrastructure) Regulations 2016*.

competing telecoms providers during their network deployments. Under the PIA remedy (see Section 4), Openreach is not required to extend BT's physical infrastructure as this would be outside the scope of a network adjustment, so we expect little additional assets to be built in its provision of regulated network access. While requests for access may still lead to some additional assets being built by Openreach as part of a network adjustment, such assets would not by definition duplicate BT's existing infrastructure. Where existing infrastructure is available and viable, including via the ATI Regulations, we anticipate telecoms providers will use it.

- 3.18 We recognise that imposing a network access obligation for Openreach's physical infrastructure could, as Openreach argues, lead to Openreach physical infrastructure being used in preference to other physical infrastructure, particularly non-telecoms infrastructure. However, this is not a reason to avoid imposing a remedy which is appropriate and proportionate to address our competition concerns arising from BT's SMP. Our assessment of the evidence in future market reviews will naturally take account of any remedies in place.

### **Disapplication of the general network access obligation in relation to copper retirement**

- 3.19 In Section 2 we set out how we have decided to support the copper retirement process, i.e. the transition from copper-based services to fibre-based services in the WLA markets. To implement this regulatory approach to copper retirement, we have decided to limit the general network access obligation on Openreach in the WLA markets as follows:
- a) We have decided that from the start of the review period the general requirement to provide network access on reasonable request should not apply to new forms of network access using BT's copper network which providers might request from Openreach, unless they are to facilitate migration to ultrafast broadband, including FTTP, G.fast and SOG.fast.
  - b) In exchange areas where Openreach has made ultrafast broadband available to 75% of premises (first threshold), we have decided that, in addition to a) above, for the premises where FTTP is available, the general requirement to provide network access on reasonable request should not apply to existing forms of network access using BT's copper network, including MPF, FTTC and G.fast services.<sup>126</sup>
- 3.20 For the reasons explained in Section 2, this staged withdrawal of the general remedies will support the transition from copper-based services to fibre-based services on the Openreach network.

### **Fair and reasonable pricing**

- 3.21 We consider that for each relevant fixed telecoms market there is a risk that Openreach might fix or maintain some or all of its prices for network access at an excessively high

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<sup>126</sup> We are including in our SMP conditions a provision that will maintain the regulatory changes necessary to support the trial in Salisbury.

level, or impose a price squeeze<sup>127</sup> in relation to such access so as to have adverse consequences for end-users of public electronic communications services.<sup>128</sup>

- 3.22 To address the risk of excessive pricing, we have decided to impose on Openreach charge control obligations for most of our specific access obligations (PIA, MPF, VULA 40/10, specific types of leased lines<sup>129</sup>, specific types of dark fibre<sup>130</sup>) and certain ancillary services, and a basis of charges obligation for existing PIA services not subject to a charge control, and for certain ancillaries including electricity (see Sections 4 to 6 and Volume 4).
- 3.23 To the extent that a charge control or a basis of charges obligation applies, we do not consider that the residual risk of a price squeeze is sufficient to warrant further regulation. This is because a control on wholesale charges means BT could only impose a price squeeze by lowering the retail price, rather than by raising the wholesale price, which is likely to make a price squeeze more costly for BT and therefore less likely.
- 3.24 In the physical infrastructure market, we are concerned that Openreach will have the incentive and ability to set excessive prices and to impose a price squeeze in relation to new forms of network access (which will not be subject to any charge control or basis of charges obligation). This is because some new forms of physical infrastructure access may be very difficult to replicate by competing telecoms providers, and the existing PIA product and any active services are unlikely to be good substitutes.
- 3.25 In the WLA, LL Access and IEC markets we expect the relevant charge controls and basis of charges obligations to act as an anchor to limit the risk of excessive pricing on new forms of network access and existing forms of network access where a charge control or a basis of charges obligation does not apply. Nevertheless, given BT's vertical integration and significant market power, we consider that in these markets there is again a risk of a price squeeze, in relation to new forms of network access and existing forms of network access where a charge control or a basis of charges obligation does not apply.
- 3.26 Consequently, we have decided to impose in each relevant fixed telecoms market an obligation for charges for network access to be fair and reasonable, except to the extent that a charge control or a basis of charges obligation applies. Reflecting the findings above, our general position is that we would interpret this fair and reasonable obligation to mean that:
- a) in the physical infrastructure market, Openreach should not set prices that result in excessive pricing or a price squeeze; and

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<sup>127</sup> Also known as "margin squeeze".

<sup>128</sup> For the LL Access HNR Area, we only found a risk that Openreach might impose a price squeeze in relation to such access so as to have adverse consequences for end-users of public electronic communications services.

<sup>129</sup> Ethernet and WDM at all bandwidths in the LL Access and IEC markets.

<sup>130</sup> Dark fibre access in the LL Access Area 3 market and inter-exchange dark fibre in the IEC markets.

- b) in each relevant fixed telecoms market, Openreach should not set prices that would equate to a price squeeze under *ex post* competition law.<sup>131</sup>
- 3.27 This provision will enable us to intervene more quickly where charges are not fair and reasonable than if we relied solely on *ex post* competition law.
- 3.28 In addition, we believe it is appropriate for this condition to include the power for Ofcom to make directions in order to secure the supply of services, and where appropriate, fairness and reasonableness in the terms and conditions (and possibly charges) of network access. Therefore, we have decided that the condition for each relevant fixed telecoms market includes a requirement for us to make, and for Openreach to comply with, any such direction(s).

### Other stakeholder comments

- 3.29 Vodafone set out its view that where WLR is used as a bearer to deliver broadband, it is in the WLA market.<sup>132</sup> As we explain in Section 5, we do not consider it appropriate to impose a specific access requirement to provide WLR in the WLA market, as an alternative charge-controlled product exists in the form of SOGEA. We interpret the general access obligation in the WLA markets as not requiring Openreach to provide a further copper bearer, including WLR. We note in this context Openreach's commitment to continue to provide WLR products until their full withdrawal in 2025.<sup>133</sup>
- 3.30 We have considered the CWU's comments about health and safety. The imposition of such requirements is outside Ofcom's remit. However, we agree with the CWU that all operators are already required to comply with relevant legislation and regulation, particularly Health and Safety rules, when it comes to safety in the workplace. We expect all operators to comply with such relevant legislation and regulation.

### Conclusion

- 3.31 We consider that the requirement in each relevant fixed telecoms market for Openreach to provide network access on reasonable request is proportionate in that it is targeted at addressing the market power that we have found BT holds. We do not consider that a different type of obligation or a more limited network access requirement would be sufficient to address the competition concerns we have identified. We also have decided to impose the condition that charges should be fair and reasonable only where there is no charge control or basis of charges obligation, and are implementing a phased removal of regulation on copper-based services, such that there is no unnecessary overlap of regulation.

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<sup>131</sup> While we would assess any dispute on the relevant facts, our starting point for evaluating cost and margins on individual services in this context would be to allow a LRIC retail margin on each service, assessed by reference to an equally efficient operator (EEO) standard.

<sup>132</sup> [Letter from \[redacted\] \(Vodafone\) to Lindsey Fussell \(Ofcom\)](#), 5 February 2021.

<sup>133</sup> We discuss this commitment in more detail in Volume 2 Section 9.

- 3.32 In order to implement this decision, we are setting SMP Condition 1 published in Volume 7. Section 87(1) of the Communications Act 2003 (the Act) provides that, where we have made a determination that a person (here BT) has SMP in an identified services market, we are setting such SMP conditions authorised by that section as we consider appropriate to apply to that dominant provider in respect of the relevant network or relevant facilities and apply those conditions to that person. Specifically, section 87(3) of the Act authorises Ofcom to set SMP services conditions requiring the dominant provider to give such entitlements as Ofcom may from time to time direct as respects the provisions of network access to the relevant network, the use of the relevant network and the availability of relevant facilities.
- 3.33 In determining which conditions are authorised by section 87(3) of the Act to set in a particular case, we took into account, in particular, the factors set out in section 87(4) of the Act. In this case:
- the economic viability of building alternative access networks means that in the absence of regulatory intervention, it is unlikely that there will be significant network build by telecoms providers other than Openreach;
  - we consider that it is feasible for Openreach to provide the physical infrastructure access and the downstream remedies we require, and we have designed the scope of our requirements with this in mind;
  - we do not consider that our measures risk undermining investment made by Openreach in its network;
  - we consider that our general network access requirement is an important element of securing economically efficient network-based competition;
  - we consider that the disapplication of the general network access requirement in relation to copper retirement takes account of the technological developments that are likely to affect the design and management of the network;
  - the general network access requirement does not have the effect of favouring one form of technology over another in relation to the design and management of ECNs;
  - we consider that our general network access requirement is an important element in supporting innovative business models that support sustainable network-based competition.

## **Requirement to publish and operate a process for requests for new forms of network access (SoR)**

### **Our proposals**

- 3.34 We proposed a condition in each relevant fixed telecoms market regarding the process by which Openreach must address requests for new forms of network access (known as the Statement of Requirements or SoR process). This condition would require Openreach to publish guidelines in relation to requests for new forms of network access (which must provide for Openreach to respond to these requests in a reasonable amount of time, have clear and transparent criteria to assess requests and to set out clear reasons for rejecting

requests), deal with the request in accordance with those guidelines and would allow Ofcom to direct Openreach to make amendments to those guidelines.

## Stakeholder responses

- 3.35 Most stakeholders that commented on this issue agreed with our proposals.<sup>134</sup> SSE highlighted that the SoR process had “significantly improved over the last couple of years”.<sup>135</sup> TalkTalk said the SoR process will help reduce potential discrimination.<sup>136</sup>
- 3.36 Hyperoptic said that Openreach is using its SoR process for managing customer change requests to PIA. It said the SoR process is set to a timeframe of six to 24 months for even “non-significant” changes, which it considers is unacceptable given the urgency of the government’s fibre rollout target. Hyperoptic said the SoR process was designed to give Openreach time to respond to complex new product requests, not to resolve relatively simple process issues that often arise with PIA.<sup>137</sup>
- 3.37 TalkTalk raised concerns that our proposals would mean the SoR process would no longer be available for most MPF products. It said it would be appropriate for change requests for copper products and services to continue to be reviewed through the established SoR process because this would enable changes to be implemented where they will benefit customers.<sup>138</sup>
- 3.38 Vodafone was concerned with Ofcom’s proposal that changes to the SoR process are agreed by industry in “appropriate manner” (see SMP condition 3.2e)). It suggested that Ofcom defines a dispute resolution procedure for such purposes.<sup>139</sup>

## Our reasoning and decisions

- 3.39 For the reasons set out below, we remain of the view that a requirement to have a process by which Openreach must address requests for new forms of network access is an appropriate and proportionate measure to complement the general network access requirement discussed above.
- 3.40 Vertically integrated telecoms providers have the ability and incentive to favour their own downstream business over third-party telecoms providers by differentiating on price or terms and conditions. Where a telecoms provider has SMP at the upstream level, such discrimination can harm competition in downstream markets. One form of discrimination is in relation to the handling of requests for new forms of network access. This has the

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<sup>134</sup> BT, Annex 9, pages 59-60; BUUK, page 7; CityFibre, paragraphs 5.84, 5.96 and 5.97 (in relation to the WLA, LL Access and IEC markets); Cumbria County Council, pages 5-6; Gigaclear, paragraph 96; Openreach, paragraphs 6.89, 6.123 and 7.73 (in relation to the physical infrastructure and LL Access markets); PAG, paragraph 6.9-6.11; Scottish Government, page 3; [SSE](#), page 3; TalkTalk, paragraph 6.85 and Table 7.5 (in relation to the WLA, LL Access and IEC markets); Telefonica, page 29; [redacted] [a confidential respondent], page 3; and [redacted] [a confidential respondent], page 5, in their responses to the January 2020 Consultation.

<sup>135</sup> SSE response to the January 2020 Consultation, page 5.

<sup>136</sup> TalkTalk response to the January 2020 Consultation, paragraph 6.85.

<sup>137</sup> [Hyperoptic](#) response to the January 2020 Consultation, page 7.

<sup>138</sup> TalkTalk response to the January 2020 Consultation, paragraphs 6.36, 6.37, 6.85 and 6.86.

<sup>139</sup> Vodafone response to the January 2020 Consultation, Annex 1 (Vodafone’s comments on the legal instruments), page 3.

potential to distort competition at the retail level by placing third-party telecoms providers at a disadvantage compared with the downstream retail business of the vertically integrated provider with SMP. We consider Openreach is in this position in each of the relevant fixed telecoms markets in which we have found BT to have SMP.

- 3.41 We note that the SoR process for all relevant fixed telecoms markets was revised in 2018 to include a high level of scrutiny by Openreach governance.<sup>140</sup> We noted in the January 2020 Consultation that we expected Openreach to undertake this process more independently and transparently than before separation. Following the separation of Openreach from BT, the new arrangements are intended to provide Openreach with more independence to take its own decisions.<sup>141</sup> Our latest Annual Monitoring Report (November 2020) observed examples of Openreach developing policies and strategy independently, such as its latest commercial business case for accelerating fibre roll-out and its own financial plans and capital requirements.<sup>142</sup>
- 3.42 The SoR process will follow the general network access obligation. Accordingly, where there is no requirement to provide network access on reasonable request there is no need for a supporting SoR process. TalkTalk's comment is therefore more relevant to the general network access obligation. We disagree with TalkTalk that the general network access obligation should continue to apply to all copper products and services at all times. Our copper retirement remedies have been designed to incentivise telecoms providers to migrate their customer base to ultrafast services while protecting consumers. Unlimited continuation of the general network access obligation may incentivise stakeholders to extend their reliance on BT's copper network without any significant benefit for consumers. We note that Openreach and industry are able to agree new commercial arrangements where the general network access obligation does not apply.
- 3.43 In response to Hyperoptic's comments on the length of the SoR process, we note that the aim of the SoR process is to enable telecoms providers to request new forms of network access as technology and business strategies develop over time.<sup>143</sup> We expect all parties to act in good faith to ensure that the process of product development is reasonably timely, and Openreach to provide all reasonably necessary additions and changes to the product to ensure that it works for both Openreach and its customers.
- 3.44 In our previous statements,<sup>144</sup> we did not impose time restrictions on the SoR process, to allow for flexibility in the development of new products without conflicting demands on Openreach's resources. We retain the view that the current SoR process is fit for purpose when used for requests for new forms of network access and that time restrictions should

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<sup>140</sup> See Openreach response to the 2018 BCMR Consultation, page 32, paragraph 149; also Openreach, 5 Mar 2018. "[GEN010/18 Changes to the Industry Statement of Requirements Process](#)", [accessed 11 March 2021].

<sup>141</sup> Ofcom, 2018. [Delivering a more independent Openreach – Interim monitoring update](#), [accessed 11 March 2021].

<sup>142</sup> Ofcom, 2020. [Delivering a more independent Openreach – Annual Monitoring Report](#), page 5, [accessed 11 March 2021].

<sup>143</sup> The SoR process managed by Openreach has a wider purpose associated with network access and service maintenance, unrelated to requests for new forms of network access under SMP Condition 3.

<sup>144</sup> [PIMR 2019](#), paragraphs 4.49 and 4.52, [BCMR 2019](#), paragraphs 11.37 to 11.39, [WLA 2018](#), paragraphs 6.66 to 6.71.

not be implemented, beyond the requirement that timescales are reasonable (SMP Condition 3.2(b)).

- 3.45 In response to Vodafone, we consider that the industry is best placed to agree in the first instance what is the most appropriate procedure for agreeing changes to the SoR process. Our regulation does not prevent Openreach and telecoms providers from agreeing a dispute resolution procedure for such purposes.

## Conclusion

- 3.46 The form of requirement we have decided to impose only goes as far as we consider is necessary to address our concerns. Rather than specifying the exact process that Openreach must follow, the condition we are imposing for each relevant fixed telecoms market allows Openreach to implement its own process within certain parameters. In particular, we are imposing a condition requiring Openreach to publish guidelines in relation to requests for new forms of network access (which must provide for Openreach to respond to these requests in a reasonable amount of time, have clear and transparent criteria to assess requests and to set out clear reasons for rejecting requests), deal with the request in accordance with those guidelines and providing for power of direction to allow Ofcom to direct Openreach to make amendments to those guidelines.
- 3.47 In order to implement this requirement, we have decided to set SMP Condition 3 published in Volume 7. Section 87(5) of the Act allows Ofcom to implement SMP services conditions that secure fairness and reasonableness in the way in which requests for network access are made and responded to by the dominant provider, and SMP services conditions that secure that the obligations imposed in the conditions are complied with within periods and at times required by or under the conditions.

## Requirements for equivalence of inputs (EOI) and no undue discrimination (NUD)

### Our proposals

- 3.48 In all the relevant fixed telecoms markets, we proposed a requirement on Openreach not to unduly discriminate in relation to the provision of network access including specific forms of network access (NUD condition).
- 3.49 In the physical infrastructure market, we said we would interpret the NUD condition as requiring strict equivalence in respect of all processes and sub-products that contribute to the supply and consumption of network access, with discrimination permitted only in cases where Openreach can demonstrate that a difference in respect of a specific process step or sub-product is justified. Where Openreach can justify any processes or systems used by PIA users as being different from those used by Openreach, the condition would still require these to be broadly equivalent. This means that any difference must not put PIA users at a disadvantage, particularly in terms of extra cost, time or uncertainty, compared to the processes Openreach follows internally.

- 3.50 For KPIs in the physical infrastructure market we noted that industry work is continuing to define KPIs and that Openreach is publishing quarterly KPIs in relation to network build. Given this we did not propose to specify KPIs at this time but did propose to require Openreach to publish information on non-discrimination in relation to network access as we may direct.
- 3.51 In the other relevant markets, we proposed to interpret undue discrimination to be when Openreach “does not reflect relevant differences between (or does not reflect relevant similarities in) the circumstances of customers in the transaction conditions it offers, and where such behaviour could harm competition.”<sup>145</sup> In the WLA and LL Access markets, our proposed NUD condition included a prohibition on geographic discounts for certain rental charges. Our decisions relating to geographic discounts are set out in Section 7.
- 3.52 In the WLA, LL Access and IEC markets, we also proposed to impose a requirement on Openreach to provide network access on an Equivalence of Inputs basis (EOI). We proposed the EOI condition would apply to all services in these markets except:
- services which are not already supplied on an EOI basis;
  - accommodation services other than in relation to the allocation of space and power;
  - sub-loop unbundling;
  - Openreach’s use of dark fibre as an input to active services;
  - wholesale WDM circuits;
  - BT’s core network; and
  - such provision of network access as Ofcom may consent to in writing.

## Stakeholder responses

### Physical infrastructure market

#### *Appropriate non-discrimination remedy*

- 3.53 A number of respondents urged Ofcom to impose an EOI requirement in the physical infrastructure market.<sup>146</sup> Some argued that PIA is still not fit for purpose and set out the issues they are currently experiencing. They said EOI is now needed to deliver an efficient PIA product within a reasonable timeframe.<sup>147</sup>

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<sup>145</sup> Ofcom, 2005, [Undue discrimination by SMP providers](#), [accessed 11 March 2021].

<sup>146</sup> Axione, paragraph 6.5-6.23; CityFibre, paragraphs 5.64-5.73; County Broadband, paragraph 31; Hyperoptic, pages 9,14-15; INCA, paragraphs 162-169; [Joint submission from CityFibre, Glide, Hyperoptic, Nextgenaccess, Telefonica, Virgin Media and Vodafone](#), paragraphs 15-18; and [Vodafone \(Part 2\)](#), paragraph 7.1, in their responses to the January 2020 Consultation.

<sup>147</sup> Axione, paragraphs 6.7-6.14; BUUK, page 6; CityFibre paragraph 5.71; [euNetworks](#), paragraphs 27-80; Hyperoptic, pages 5-15; INCA, paragraphs 162-169; and Joint submission from CityFibre, Glide, Hyperoptic, Nextgenaccess, Telefonica, Virgin Media and Vodafone, paragraphs 15-18, in their responses to the January 2020 Consultation.

- 3.54 A number of respondents suggested that the most effective means of preventing BT favouring its downstream business would be to separate the duct and poles business from the rest of Openreach.<sup>148</sup>
- 3.55 PAG,<sup>149</sup> TalkTalk, Telefonica and Three said Ofcom should impose EOI if meaningful progress is not made in developing PIA to meet the needs of telecoms providers. PAG said that the threat of EOI being applied should ‘sharpen’ Openreach’s focus on improving the product. PAG and TalkTalk suggested a number of other measures that would support development of PIA in the absence of EOI.<sup>150</sup> PAG and TalkTalk asked us to be clearer about whether we intend to impose an EOI obligation in the physical infrastructure market in the future.<sup>151</sup>
- 3.56 Openreach agreed with our proposed NUD obligation.<sup>152</sup>
- 3.57 Openreach said that an EOI-based remedy would increase costs and would directly impact its ability to deliver on the PIA systems development workstack and the priorities of PIA customers. It agreed that introducing a second form of functional separation was unnecessary and disproportionate.<sup>153</sup> Some other respondents recognised the risks of applying an EOI remedy in the physical infrastructure market.<sup>154</sup>
- 3.58 Openreach said that its requirements were different to those of a typical PIA customer, and conversely that PIA customers have different needs and priorities to Openreach. It pointed to a number of recent and in-progress systems developments as evidence that an EOI remedy would not be appropriate in the physical infrastructure market. Openreach said that it remained committed to ensuring non-discrimination on a forward-looking basis.<sup>155</sup>

#### *Transparency measures and compliance*

- 3.59 Respondents agreed that PIA KPIs are useful for keeping track of differences between telecoms providers’ and Openreach’s ways of working.<sup>156</sup> Openreach supported Ofcom’s proposed approach to compliance with its non-discrimination obligations and said it

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<sup>148</sup> Axione, paragraph 1.36; euNetworks, paragraphs 7 and 63; INCA paragraph 161; PAG, paragraph 6.15; TalkTalk, paragraph 8.36; and Joint submission from CityFibre, Glide, Hyperoptic, Nextgenaccess, Telefonica, Virgin Media and Vodafone, paragraph 18, in their responses to the January 2020 Consultation.

<sup>149</sup> The Passive Access Group is a joined organisation between some of the UK’s main telecoms providers - Colt, TalkTalk and Vodafone.

<sup>150</sup> PAG, paragraph 6.12-6.17; TalkTalk paragraphs 8.34-8.37; Telefonica, paragraph 1.11 and 3.26; and [Three](#), paragraphs 18.1-18.2, in their responses to the January 2020 Consultation.

<sup>151</sup> PAG, [paragraph 6.17](#); and TalkTalk, paragraph 8.37, in their responses to the January 2020 Consultation.

<sup>152</sup> BT Group, Annex 9, page 60; and Openreach, paragraphs 6.100-6.116, in their responses to the January 2020 Consultation.

<sup>153</sup> Openreach response to the January 2020 Consultation, paragraphs 6.100-6.103.

<sup>154</sup> Telefonica, paragraph 1.11 and 3.26; and Three, paragraph 18.1-18.2, in their responses to the January 2020 Consultation.

<sup>155</sup> Openreach response to the January 2020 Consultation, paragraphs 6.104-6.110.

<sup>156</sup> Joint submission from CityFibre, Glide, Hyperoptic, Nextgenaccess, Telefonica, Virgin Media and Vodafone response to the January 2020 Consultation, paragraph 19.

remained committed to working on compliance including KPIs and other performance metrics.<sup>157</sup>

- 3.60 CityFibre, euNetworks, Hyperoptic, PAG and [redacted] [a confidential respondent] requested that where NUD was imposed, Ofcom should impose service level commitments that address outstanding issues with PIA within a prescribed timescale, as well as an end-to-end KPI.<sup>158</sup>
- 3.61 Some stakeholders argued an NUD obligation requires more monitoring and reporting than EOI.<sup>159</sup>
- 3.62 euNetworks raised concerns that Openreach could veto reasonable proposals made by telecoms providers during the PIA implementation period. It asked for an escalation process to Ofcom where industry negotiations do not lead to resolution.<sup>160</sup>
- 3.63 Axione, euNetworks and Three said Ofcom should require Openreach to proactively justify all instances of non-equivalence.<sup>161</sup>
- 3.64 Openreach supported Ofcom's proposal to require it to produce an internal reference offer (IRO).<sup>162</sup> Some respondents raised concerns with the existing IRO, arguing it fails to identify all areas of non-equivalence, making it harder to assess Openreach's compliance with the NUD obligation.<sup>163</sup> We discuss the general IRO requirement below and the specific PIA IRO requirement in Section 4.

### Other markets

- 3.65 Most respondents did not raise concerns with our proposed non-discrimination requirements in the WLA, LL Access and IEC markets.
- 3.66 Vodafone requested that dark fibre access should operate with an EOI requirement that includes a "must use" requirement on Openreach, and that the EOI exemptions for WDM and accommodation services should be reviewed.<sup>164</sup>

### Our reasoning and decisions

- 3.67 It is important that Openreach does not unduly discriminate between different customers when supplying access services. Wherever possible, Openreach should provide access to

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<sup>157</sup> Openreach response to the January 2020 Consultation, paragraphs 6.111-6.113 and 6.117-6.122.

<sup>158</sup> CityFibre, paragraph 5.74; euNetworks, paragraphs 29, and 46-60; Hyperoptic, page 1 and 9; PAG, paragraph 6.14; and [redacted] [a confidential respondent], page 8, in their responses to the January 2020 Consultation.

<sup>159</sup> Axione, paragraphs 6.32-6.34; CityFibre, paragraph 5.74; euNetworks, paragraphs 29, and 46-60; Hyperoptic, page 1 and 9; PAG, paragraph 6.12; TalkTalk, paragraph 8.36; and [redacted] [a confidential respondent], page 8, in their responses to the January 2020 Consultation.

<sup>160</sup> euNetworks response to the January 2020 Consultation, paragraphs 43-44.

<sup>161</sup> Axione, paragraphs 6.15-6.22; euNetworks, paragraphs 71-80; and Three, paragraph 18.3, in their responses to the January 2020 Consultation.

<sup>162</sup> Openreach response to the January 2020 Consultation, paragraphs 6.117-122.

<sup>163</sup> Joint submission from CityFibre, Glide, Hyperoptic, Nextgenaccess, Telefonica, Virgin Media and Vodafone, paragraph 20; Axione, paragraphs 6.20-6.21; euNetworks, paragraph 77-78; INCA, paragraph 165; TalkTalk, paragraph 8.36; and [redacted] [a confidential respondent], pages 4-5, in their responses to the January 2020 Consultation.

<sup>164</sup> Vodafone (Part 2) response to the January 2020 Consultation, paragraphs 6.20-6.22.

itself, to BT downstream, and to other telecoms providers on the same terms. Without this level playing field, Openreach could engage in practices that could distort downstream competition and harm consumers' interests. This may in turn discourage alternative network deployment, negatively affecting consumer outcomes.

- 3.68 A non-discrimination obligation is intended to prevent such discrimination in a way that may distort competition.
- 3.69 Of the various forms of non-discrimination obligation, we consider EOI to be the most effective. EOI requires the dominant provider to supply exactly the same services to all telecoms providers (including its own downstream divisions) on the same timescales, terms and conditions (including price and service levels), by means of the same systems and processes,<sup>165</sup> and by providing the same information. However, EOI does not require all providers to use exactly the same services, systems and processes. Rather, it requires all services, systems and processes to be available on the same basis to all providers. This means that EOI does not prevent flexibility, but there will clearly be a trade-off between the value of EOI and the amount of flexibility that providers want to use – in that if providers use a product more flexibly the value of EOI will be less.
- 3.70 While our strong preference is for EOI, we are conscious that applying EOI to existing arrangements can be very disruptive and costly, as it can require the re-engineering of existing systems and processes. Where such disruption and/or cost is high, imposing EOI would be disproportionate and so only NUD would apply.
- 3.71 We generally interpret undue discrimination to be when Openreach “does not reflect relevant differences between (or does not reflect relevant similarities in) the circumstances of customers in the transaction conditions it offers, and where such behaviour could harm competition.”<sup>166</sup> This means that the NUD condition requires Openreach to supply equivalent services, unless they reflect relevant differences (or similarities) between providers and do not harm competition.
- 3.72 Our general approach is to apply EOI to new and upgraded services, systems and processes as they are developed and to rely on the NUD conditions for existing ones.<sup>167</sup> Where we do not impose EOI, we generally interpret the NUD condition as requiring Openreach to build any new or upgraded services, systems and processes in a way that supports EOI where possible. This gives us the option of imposing an EOI obligation in the future, while avoiding unnecessary disruption and cost.
- 3.73 Our decisions in relation to each of the relevant fixed telecoms markets are set out below.

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<sup>165</sup> We include in this any sub-products, sub-systems, sub-processes and platforms.

<sup>166</sup> Ofcom, 2005, Undue discrimination by SMP providers.

<sup>167</sup> Developing new and upgraded services, systems and processes would include for example, major platform rebuild/refactoring utilising new hardware, operating systems or databases, regardless if the re-platformed system feels and behaves like the legacy system or otherwise.

### Physical infrastructure market

- 3.74 In the physical infrastructure market we have decided to impose a no undue discrimination requirement as proposed in our consultation. In this market, we interpret the condition as requiring strict equivalence where possible with discrimination permitted only in cases where Openreach can demonstrate that a difference in respect of a specific service, system or process is justified.
- 3.75 Our decision reflects the fact that Openreach has been extensively using its physical infrastructure to supply a broad range of services over many decades. To implement full EOI today would therefore require extensive re-engineering with the associated disruption and cost. However, given the importance of PIA, Openreach should be able to demonstrate that any difference between its own use and use by other providers is justified.
- 3.76 In practice, imposing an EOI obligation on Openreach in relation to PIA would require it to alter its organisational structure to separate the part which uses PIA as an input from that which supplies and manages PIA. We consider that this would be disruptive (impacting on availability of key services at a crucial time for network rollout) and would increase Openreach's costs.
- 3.77 Where Openreach is supplying PIA to BT's downstream divisions, we do not expect differences to be justified. Therefore, Openreach must supply PIA to BT downstream divisions on a EOI basis. As discussed above, this does not prevent BT's downstream divisions and other providers using PIA flexibly which could result in them using slightly different services, systems and processes.<sup>168</sup>
- 3.78 Where Openreach can justify the lack of availability to competing telecoms providers of any services, systems or processes used by BT, the NUD condition still requires these to be provided without undue discrimination. As noted above, we generally interpret the NUD condition as requiring Openreach to supply equivalent services, unless they reflect relevant differences (or similarities) between providers and do not harm competition. In the context of the physical infrastructure market, this means that any difference must not put network users at a disadvantage, particularly in terms of extra cost, time or uncertainty, compared to Openreach. It would not be justifiable for Openreach to impose PIA systems or engineering constraints on PIA users that it did not consider necessary for itself.<sup>169</sup>
- 3.79 We expect Openreach to build any new or upgraded services, systems and processes in a way that supports EOI. While we accept that this might not always be possible, we would require a strong justification for not doing so and consider such circumstances to be exceptional. We consider that making new or upgraded services, systems and processes

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<sup>168</sup> We note in this context Openreach's view that the PIA product is "flexible and adaptable" and Office of the Telecommunications Adjudicator (OTA2) observation that PIA is used by different operators in a variety of ways, leading to different network configurations across Openreach's physical infrastructure.

<sup>169</sup> We would expect that unless otherwise justified the processes associated with the raising, validation, execution and auditing of PIA network adjustments offer telecoms providers the same degree of discretion, timeliness and flexibility as Openreach's direct labour force or their third-party contract partners have in addressing physical infrastructure remedial works for their full-fibre deployment programmes.

equivalent from the outset will not involve the same level of disruption and cost as re-engineering existing ones.<sup>170</sup> When Openreach is developing any systems relevant for PIA, it should ensure that these are fully interoperable with the systems of third parties. Given our position that Openreach must provide its services, systems and processes on an equivalent basis wherever possible, we do not consider that we need to set a timetable for imposing an EOI requirement or for Openreach to begin using PIA for its own operations.

*PIA pricing under the NUD obligation*

- 3.80 In Annex 8, we provide guidance on how we will interpret the no undue discrimination condition with respect to PIA pricing.

*Transparency measures*

- 3.81 Given the importance of non-discrimination in creating an environment in which competing providers have the confidence to make very substantial capital investments relying on access to Openreach's duct and pole network, we have decided to impose a requirement on Openreach to publish such information on non-discrimination in relation to network access as we may direct.
- 3.82 Since the commercial launch of PIA on 1 April 2019, the industry has defined and implemented a set of KPIs to provide the necessary transparency between PIA and Openreach's deployment of its own full-fibre network. Openreach now publishes quarterly KPIs relating to network build (specifically network adjustments to facilitate network build). Work is continuing to define a broader set of KPIs that cover both network build and in-life performance of the duct and pole infrastructure. Refinement of these KPIs is expected to continue as PIA customers deploy networks at scale. Consequently, while the current SMP conditions allow us to impose non-discrimination KPIs, we consider that it is too early to do so in the physical infrastructure market.
- 3.83 As discussed below, we require Openreach to publish a reference offer in negotiation with telecoms providers and these negotiations should help in developing appropriate KPIs.

*Compliance*

- 3.84 We agree with stakeholders that we should take a proactive approach to monitoring non-discrimination. We will continue to monitor Openreach's engagement with PIA users as the PIA product develops, and the Openreach Monitoring Unit will report on progress in relation to Openreach's commitments.
- 3.85 We note respondents' concerns about Openreach's compliance with the no undue discrimination requirement and we will continue to work with the Office of the Telecoms Adjudicator (OTA2) and telecoms providers in order to evaluate their experience of using PIA. We do not consider a specific escalation process is necessary in addition to Ofcom's existing powers to investigate apparent compliance failures.

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<sup>170</sup> This would include for example, major platform rebuild/refactoring utilising new hardware, operating systems or databases, regardless of whether the re-platformed system feels and behaves like the legacy system or otherwise.

- 3.86 We remain of the view that there should be no obligation on Openreach to proactively justify all instances of non-equivalence. We consider that such obligation is unnecessary, given we are imposing a requirement on Openreach to produce an IRO (as discussed below) that sets out its internal services, systems and processes in sufficient detail to allow Ofcom and telecoms providers to identify any differences.
- 3.87 We note stakeholders' comments that the most effective means of preventing BT favouring its downstream business would be to separate the duct and poles business from the rest of Openreach. The operating structure of BT, and specifically whether BT should be structurally separated, was not in the scope of this market review.

### **WLA, LL Access and IEC markets**

- 3.88 In the WLA, LL Access and IEC markets, we have decided, with some specific exemptions, to impose an EOI obligation. This is because Openreach is already providing most services in these markets on an EOI basis and we expect it to continue doing so in the future. Therefore, we have decided to impose an EOI requirement covering all WLA, LL Access and IEC services (including any new forms of network access in these markets), except the exemptions described below.
- 3.89 As noted above, EOI does not prevent Openreach from innovating or tailoring its services to meet telecoms providers' needs. It simply means that any service, system and process must be made available to all telecoms providers on the same basis. So, if Openreach offers a particular commercial access arrangement, this must be made available on the same terms to all telecoms providers, including BT's downstream divisions. Our regulations permit Openreach to seek Ofcom's consent in writing to the provision of network access on a non-EOI basis where circumstances warrant. This is one of the exemptions to EOI set out below.
- 3.90 We disagree with Vodafone that we should impose further restrictions on Openreach in relation to accommodation services, dark fibre access or WDM circuits, for the reasons set out below.<sup>171</sup>
- 3.91 As noted above, we have decided to interpret undue discrimination to be when Openreach "does not reflect relevant differences between (or does not reflect relevant similarities in) the circumstances of customers in the transaction conditions it offers, and where such behaviour could harm competition."<sup>172</sup> This means the NUD condition requires Openreach to supply equivalent services, unless they reflect relevant differences (or similarities) between providers and do not harm competition.

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<sup>171</sup> See also BCMR 2019 Statement, paragraphs 11.66 to 11.72. In relation to this review period, we set out the reasons for exemptions to the EOI condition below.

<sup>172</sup> Ofcom, 2005, Undue discrimination by SMP providers.

### Exemptions to the EOI condition in the WLA, LL Access and IEC markets

3.92 We consider that EOI is not appropriate for all products in these markets. Below, we set out a number of exemptions and, where relevant, provide further guidance on how we will interpret the NUD condition. These exemptions are outlined in Table 3.2 below.<sup>173</sup>

**Table 3.2: Exemptions to the EOI condition in the WLA, LL Access and IEC markets**

WLA, LL Access and IEC	
Existing network access not required to be provided on an EOI basis <sup>174</sup>	
Accommodation services, other than in relation to the allocation of space and power	
Such provision of network access as Ofcom may consent to in writing	
WLA	LL Access and IEC
Sub loop unbundling (SLU)	Dark fibre as an input to active services
	Wholesale WDM circuits
	BT's core network

#### *Existing network access not required to be provided on an EOI basis*

3.93 We have decided that where network access in the WLA, LL Access and IEC markets is currently provided on non-EOI terms, the EOI obligation will not apply. This will ensure that Openreach is not required to identify and re-engineer existing network infrastructure. This is consistent with the approach we have taken in previous market reviews.<sup>175</sup>

#### *Accommodation services, other than in relation to allocation of space and power*

3.94 The availability of accommodation services in BT exchanges is an important enabler of competition in the WLA, LL Access and IEC markets as well as the physical infrastructure market. It allows telecoms providers to make use of disaggregated products such as FTTP and EAD Local Access and facilitates competition in downstream markets. Space and power in BT's exchanges can be limited, and in the absence of regulation Openreach would have the incentive and ability to discriminate in favour of BT when allocating these resources.

3.95 However, BT's requirements for accommodation services are likely to be different to those of other telecoms providers because of the scale of its existing equipment deployment. BT's downstream divisions are likely to use different accommodation products from those used by other telecoms providers. As set out above, while our strong preference is for EOI,

<sup>173</sup> We have also included in our SMP conditions a provision that will maintain the regulatory changes necessary to support the trials in Salisbury and Mildenhall.

<sup>174</sup> For example, this exemption would allow BT to offer its Microconnect Distributed Antenna (MDA) service to all Mobile Network Operators (see Ofcom, 2015, [Request from BT for an exemption from the Undertakings for the Microconnect Distributed Antenna service](#), [accessed 11 March 2021]).

<sup>175</sup> In the physical infrastructure market BT has so far not provided any network access services on EOI basis. For WLA services see 2018 WLA Statement, paragraph 6.97. For leased lines see 2019 BCMR Statement, paragraphs 11.60 and 11.61, and 2013 BCMR Statement, paragraph 12.201.

we are conscious that applying EOI to existing arrangements can be very disruptive and costly, which is likely to be the case in relation to accommodation services.

3.96 For these reasons, we have decided to apply an exemption from the EOI requirement on BT for accommodation services other than the allocation of space and power. For clarity, in relation to space and power, we have decided that it will continue to be allocated on a first come first serve (FCFS) basis which we see as a fair and reasonable approach.

3.97 In our 2018 WLA Statement we did not impose an EOI requirement on BT in relation to allocation of space and power because we considered BT's Undertakings to provide similar protection.<sup>176</sup> However, these undertakings are now superseded by the 2018 BT Commitments, which do not cover the allocation of space and power. Therefore, we have decided to impose an EOI requirement that applies to the allocation of space and power in each of the markets where we are imposing an EOI condition, i.e. the WLA, LL Access and IEC markets.

*Sub-loop unbundling (WLA markets)*

3.98 We have decided to exempt Openreach from the application of the EOI obligation to SLU services in the WLA market. It is likely that an EOI obligation in respect of SLU would require Openreach to re-engineer existing services and processes, which would be costly. We consider that this cost would be disproportionate given the current and projected low level of use of SLU services.<sup>177</sup>

*Dark fibre as an input to active services (LL Access and IEC markets)*

3.99 We have decided to exempt Openreach from the application of the EOI obligation to our dark fibre remedies (dark fibre access and dark fibre inter-exchange) in the LL Access and IEC markets where dark fibre is used by Openreach as an input to its active services.

3.100 As noted above, applying EOI to existing arrangements can be very disruptive and costly. In practice, imposing an EOI obligation on Openreach would require Openreach to alter its organisational structure to separate the part which uses dark fibre as an input (into the supply of actives) from that which supplies and manages dark fibre. We consider that this would be disruptive and costly: specifically, it would likely increase Openreach's overall cost for the provision of active and dark fibre circuits.

3.101 These points are exacerbated by the fact that we are only imposing dark fibre in the LL Access Area 3 market and from certain BT Only exchanges in the IEC market. We expect the dark fibre remedies will affect a minority of total circuits. We discuss potential take-up of the dark fibre access remedy in Annex 9.

3.102 For the above reasons we consider that imposing EOI in this specific case would be disproportionate. We believe that the NUD condition addresses our competition concern,

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<sup>176</sup> 2018 WLA Statement, paragraph 6.98. Also, see [Variations to BT's Undertakings under the Enterprise Act 2002 in respect of BT's NGN, Space and Power and OSS separation](#) [accessed 11 March 2021].

<sup>177</sup> For a discussion of SLU volumes, see Section 5.

without incurring any of the disadvantages that would result from Openreach being obliged to provide dark fibre to itself under an EOI obligation only.

- 3.103 We have decided to interpret the NUD condition to mean that Openreach should not favour its own active products over the provision of dark fibre to other telecoms providers. For example, the allocation of available dark fibre between Openreach's active products and provisioning of dark fibre circuits to other telecoms providers should not be unduly discriminatory. Accordingly, if there is a limited amount of dark fibre available on a given route, Openreach should not unduly prioritise the provisioning of active services over the provisioning of dark fibre to other telecoms providers.
- 3.104 The exemption outlined above applies only where Openreach is providing dark fibre to itself as an input to active products. Where Openreach supplies dark fibre to a BT downstream division we have decided that an EOI obligation will apply.<sup>178</sup>

*WDM services (LL Access and IEC markets)*

- 3.105 In the LL Access and IEC markets, telecoms providers may wish to provide leased lines using a combination of their own networks and WDM services from Openreach, using bespoke interfaces to facilitate interconnection. BT's downstream operations, however, may be more likely to use WDM services solely from Openreach and without any need for interconnection to deliver end-to-end services, and would therefore use WDM services with standard interfaces.
- 3.106 Where Openreach provides WDM services to other telecoms providers which differ from those it provides to BT only in relation to the interfaces used, we have decided there is an exemption from the EOI obligation in relation to the prices Openreach charges for these services. Openreach would be required not to discriminate unduly between the prices it charges for such services, which we would interpret to mean that the difference in price between the variants of the same product should be no greater than the difference between their long-run incremental costs. All other aspects of providing such services would be on EOI basis.
- 3.107 We believe this requirement is proportionate because BT may have no need to consume WDM services with non-standard interfaces and an EOI requirement is therefore likely to have limited effect. This requirement is consistent with our previous regulation of WDM services.<sup>179</sup>
- 3.108 Openreach is also exempt from the EOI obligation in relation to WDM services that are longer than 70km.<sup>180</sup> This exemption is related to BT's Wavestream National services. To deliver these services, Openreach uses a fibre splice to interconnect the LL Access fibre to the IEC fibre without any active equipment (point-to-point solution), or uses proprietary interfaces for the NTE and core WDM equipment (shared solution). BT has previously

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<sup>178</sup> We have decided that our SMP conditions do not apply to BT Enterprise where it uses Openreach's dark fibre as an input to services it offers. We discuss this further in Section 1.

<sup>179</sup> See 2016 BCMR Statement, paragraphs 11.66-11.68; 2016 BCMR Statement, paragraphs 8.90-8.92.

<sup>180</sup> See 2013 BCMR Statement, paragraph 13.73 and Annex 10 of the 2011 BCMR Consultation.

submitted that, if Openreach is required to provide the Wavestream National services on an EOI basis, it would need to upgrade its equipment and systems which would significantly increase the cost of delivering these services.

*BT's core network (IEC markets)*

- 3.109 In Volume 2 Section 8, we have concluded that BT has SMP in the IEC markets at BT Only and BT+1 exchanges. At 21 of these exchanges, BT has deployed both backhaul and core nodes. We have considered whether the EOI obligation in the IEC market should apply to connections to these 21 exchanges (referred to as the 21 BT core exchanges), and proposed to exempt BT from its EOI obligation in relation to its core network.
- 3.110 As set out in Sections 4 and 5 of this volume, we impose specific access remedies to address our competition concerns in the IEC market. In particular, Openreach is required to provide network access in the form of active leased lines and/or DFX as appropriate, including connections to the 21 BT core exchanges. It is also subject to the NUD condition.
- 3.111 Requiring Openreach to provide network access on an EOI basis at the 21 BT core exchanges would mean that BT would, in addition, need to self-consume active leased lines and/or dark fibre in order to run its core network.
- 3.112 As discussed above, applying EOI to existing arrangements can be disruptive and costly. In this case, BT has informed us that, if EOI is imposed on the 21 BT core exchanges, this will create uncertainty in the way BT plans its investments in the core network and will impose disproportionate costs on BT in terms of network resilience and the cost of providing core network services.<sup>181</sup> We consider that this represents an unacceptable level of cost and disruption, and is not needed to address our competition concerns in the IEC market in addition to the specific access remedies we have imposed.
- 3.113 An exemption from EOI in relation to BT's core network is also consistent with the approach we have taken historically.<sup>182</sup> BT was exempt from the application of EOI to its core network under the former BT Undertakings.<sup>183</sup> While these have been superseded by the 2018 BT Commitments, the latter specify that BT will act in accordance with arrangements agreed with Ofcom in respect of all of the exemptions to the Undertakings agreed between BT and Ofcom.<sup>184</sup> In the 2019 BCMR, we decided to apply EOI to all connections at the 21 BT core exchanges on a forward-looking basis. However, as noted above, BT has provided new information which has improved our understanding of the likely cost and disruption that requiring EOI at the 21 BT core exchanges would entail, leading to our change of position in this review.<sup>185</sup>

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<sup>181</sup> BT, Reregulation of BT's core network, BT Group meeting with Ofcom dated 1 October 2019; Email from [redacted] (BT) to [redacted] (Ofcom) titled "Re-regulation of BT's core network", dated 19 November 2019; and BT Group response to the January 2020 Consultation, Annex 7.

<sup>182</sup> See 2013 BCMR Statement, paragraph 12.203-12.204 and 2016 BCMR Statement, paragraphs 4.630-4.631.

<sup>183</sup> BT Undertakings, section 5.46.1.

<sup>184</sup> 2018 BT Commitments, section 25.1.

<sup>185</sup> BT, Reregulation of BT's core network BT Group meeting with Ofcom, 1 October 2019; Email from [redacted] (BT) to [redacted] (Ofcom) on "Re-regulation of BT's core network", dated 19 November 2019; and BT Group response to the January 2020 Consultation, Annex 7.

- 3.114 For these reasons, we have decided to exempt BT from its EOI obligation in relation to its core network as set out in Volume 7, Schedule 4.

*Ofcom discretion to consent in writing to provision on a non-EOI basis*

- 3.115 In previous reviews, stakeholders have raised concerns about the effect the imposition of an EOI obligation could have on Openreach's ability to respond in a competitive or innovative way to customer requirements in markets where customers have options to use other network operators. In consequence, we have decided that Ofcom should be able to consent in writing to the provision of network access on a non-EOI basis where circumstances warrant. This is to provide greater flexibility.

## Conclusion

- 3.116 We consider the imposition of the non-discrimination conditions as detailed above to be proportionate in that they seek to prevent discrimination that would adversely affect competition and ultimately cause detriment to citizens and consumers. Furthermore, we consider that these requirements represent the minimum required to address our competition concerns; in particular, our EOI requirement only applies to existing products where Openreach is already providing services on an EOI basis.
- 3.117 To implement these decisions, we have decided to set the SMP Conditions 4 and 5 in Volume 7. Section 87(6)(a) of the Act authorises the setting of an SMP services condition requiring the dominant provider not to discriminate unduly against particular persons, or against a particular description of persons, in relation to matters connected with network access to the relevant network or with the availability of relevant facilities. Section 87(6)(b) of the Act authorises the setting of an SMP services condition requiring the dominant provider to publish, in such manner as we may direct, all such information as they may direct for the purpose of securing transparency in relation to such matters.

## Requirement to publish a Reference Offer (RO)

### Our proposals

- 3.118 We proposed that Openreach must publish a Reference Offer (RO) in relation to the provision of network access in each relevant fixed telecoms market. The RO must include terms and conditions for provisioning, technical information, Service Level Agreements (SLAs) and Service Level Guarantees (SLGs), and availability of co-location. We also proposed a requirement on Openreach to publish an Internal Reference Offer (IRO) where supplying services to itself on a non-EOI basis (e.g. physical infrastructure and dark fibre).

## Stakeholder responses

- 3.119 BUUK, Cumbria County Council, INCA and TalkTalk agreed with our proposal.<sup>186</sup>
- 3.120 Other stakeholders commented on our RO proposals (including comments on SLAs/SLGs and IRO) specifically in relation to the PIA market. We respond to these comments in Section 4.

## Our reasoning and decisions

- 3.121 We consider that the requirement to publish a RO which we are imposing in each relevant fixed telecoms market is appropriate and proportionate.
- 3.122 A requirement to publish a RO has two main purposes:
- a) to assist transparency for the monitoring of potential anti-competitive behaviour; and
  - b) to give visibility to the terms and conditions on which other providers will purchase wholesale services.
- 3.123 The RO helps ensure stability (in regard to investment and promoting market entry) in the relevant fixed telecoms markets, allowing for speedier negotiations, avoiding possible disputes and giving confidence to those purchasing wholesale services that they are being provided on non-discriminatory terms. Without this, market entry might be deterred to the detriment of long-term competition and hence consumers.
- 3.124 The RO obligation we have decided to impose specifies the information to be included and how it should be published. We consider that this comprises the minimum information necessary to achieve the purposes set out above.
- 3.125 We have decided that the published RO must set out (as a minimum):
- a) a clear description of the services on offer, including technical characteristics and operational processes for service establishment, ordering and repair;
  - b) the locations of points of network access and the technical standards for network access;
  - c) conditions for access to ancillary and supplementary services associated with the network access, including operational support systems and databases, etc.;
  - d) contractual terms and conditions, including dispute resolution and contract negotiation/renewal arrangements;
  - e) charges, terms and payment procedures;
  - f) service level agreements and service level guarantees (see “SLAs and SLGs obligations” below); and

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<sup>186</sup> BUUK, page 6; Cumbria County Council page 6-7; INCA, paragraph 157; and TalkTalk, paragraph 6.88; in their responses to the January 2020 Consultation.

g) to the extent that Openreach uses the service in a different manner to other telecoms providers or uses similar services, Openreach is required to publish an IRO in relation to those services (see “IRO” below).

3.126 In Sections 4, 5 and 6, we discuss stakeholder comments and set out the RO requirements for the specific forms of network access we are requiring Openreach to provide.

### Internal Reference Offer

3.127 Where Openreach is supplying services to itself on a non-EOI basis (e.g. physical infrastructure and dark fibre), an IRO allows us and stakeholders to identify any differences in the processes for internal use of network access compared to use by third parties. We have therefore decided that, to the extent that Openreach uses the regulated services specified in the RO in a different manner to other telecoms providers or uses similar services not available to other telecoms providers, Openreach is required to publish an IRO in relation to those services. The IRO must at a minimum include the same detail as the published RO and in sufficient detail to allow Ofcom and telecoms providers to identify any differences in process (see above).<sup>187</sup>

### SLAs and SLGs obligations

3.128 In order to be effective, it is important that the contractual arrangements fulfil the following objectives:

- incentivise the efficient provision of reliable services to Openreach’s wholesale customers;
- set out fair and reasonable compensation payments for delays in delivery and repair of such services; and
- allow Openreach and its wholesale customers to monitor effectively the performance of Openreach’s provision and repair regulated wholesale services.

3.129 In order to achieve these objectives, contractual arrangements need to include:

- a set of SLAs which reflect the commercial SLAs provided to wholesale customers;
- a set of SLGs which set out fair and reasonable compensation for delays in the provision and repair of such services;
- a requirement that SLG payments are made on a proactive basis by Openreach; and
- specific service level commitments on the availability of the relevant operational support systems.

3.130 We have therefore decided to impose on Openreach a requirement to include in its contractual arrangements SLAs and SLGs as set out in the previous paragraph.

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<sup>187</sup> The scope of the no undue discrimination covers Openreach’s full product range, including those on the copper and leased lines networks. Therefore, Openreach should consider their obligations in respect of all use of duct. The IRO must include a comparison of all relevant services, systems and processes (including products or programmes) that use network access.

### SLAs and SLGs negotiations

- 3.131 In the 2018 WLA and 2019 BCMR, we adopted contract negotiation principles, SLA/SLG assessment criteria and negotiating behaviours to be applied to future industry negotiations in relation to SLAs/SLGs facilitated by OTA2.
- 3.132 Where all parties have broadly similar negotiating strengths, commercial negotiation without the involvement of the industry regulator is the preferred method for reaching agreement on the terms of SLAs and SLGs. However, negotiations between Openreach and its customers are not likely to be balanced and we have concerns about the predictability and visibility of the process that determines critical aspects of SLA/SLG terms. While maintaining that regulatory intervention should be the last resort, we consider that there should be a defined, structured and open process for the negotiation of SLA/SLG terms which reserve a central role for the OTA2 and set a time limit for negotiations.
- 3.133 We have therefore decided that the same principles, criteria and behaviours for negotiating SLAs and SLGs as set out in the 2018 WLA and 2019 BCMR should continue to apply to future contract negotiations between Openreach and its customers in relation to the SLAs and SLGs for the provision of wholesale fixed telecoms products and services. These are set out in Table 3.3 and Table 3.4 below.<sup>188</sup>

**Table 3.3: Principles for the contract negotiation process**

Principle	Description
<b>Principle 1</b>	The OTA2 should facilitate all negotiations to create or change an SLA/SLG and that this negotiation will allow input from all affected parties.
<b>Principle 2</b>	The OTA2 will, using stated criteria, assess whether a request for negotiations on a new SLA/SLG or change to an existing SLA/SLG (and related contract terms) should be facilitated through this negotiation process.
<b>Principle 3</b>	No negotiations over the content of an SLA/SLG should extend beyond six months, with regular reporting to Ofcom. If, in the opinion of the OTA2, negotiations cannot be successfully concluded or have not been concluded within six months, then the OTA2, as part of its final report to Ofcom, will set out its view on whether and on what basis Ofcom should initiate a review.
<b>Principle 4</b>	Provision should continue according to the terms of an appropriate, pre-existing SLA/SLG until such time as a new SLA/SLG can be agreed.

<sup>188</sup> For detailed discussion of these principles, see 2019 BCMR Statement, Annex 22, paragraphs A22.71- A22.18.

**Table 3.4: Criteria for the assessment of SLA/SLG requests**

Criterion	Description
<b>Criterion 1</b>	The request does not duplicate an existing request that is either being considered by the OTA2 or is under discussion within an existing industry forum.
<b>Criterion 2</b>	The request could provide an adequate material benefit for the telecoms provider or industry and that any negative impact of the request not being addressed cannot be easily mitigated without the reasonable support of Openreach.
<b>Criterion 3</b>	The request does not seek to address a telecoms provider's deficiency that should more appropriately be addressed by the telecoms provider(s) themselves.
<b>Criterion 4</b>	The request has adequate scale and support across industry or from those telecoms providers addressing a recognised end customer group to which the request relates.

3.134 Where industry negotiations in relation to SLAs/SLGs do not result in an agreement through the Industry Working Group and working with the OTA, we remind stakeholders they remain able to submit a complaint or refer a dispute to Ofcom.

### Other wholesale pricing structures

3.135 In Section 7, we discuss our concerns around other wholesale commercial arrangements that Openreach might deploy that could deter alternative network rollout, such as loyalty inducing discounts. We recognise that such commercial arrangements may be beneficial. However, we are concerned that some could have the effect of deterring or undermining alternative network rollout. The RO requirement will help us to monitor the commercial arrangements proposed by Openreach while our SMP conditions require Openreach to modify the RO in accordance with any direction we may make.

### Conclusion

3.136 We consider that the requirement in each relevant fixed telecoms market for Openreach to publish a RO is proportionate in that it is targeted at addressing the market power that we have found BT holds. We consider that the information that we are requiring to be published in the RO is the minimum that is necessary for providing transparency for monitoring potential anti-competitive behaviour and to give visibility on the terms and conditions of network access.

3.137 To give effect to the RO proposals we have decided to set SMP Condition 7 in Volume 7. Section 87(6)(c) of the Communications Act 2003 authorises the setting of SMP services conditions requiring the dominant provider to publish, in such a manner as Ofcom may direct, the terms and conditions on which it is willing to enter into an access contract.

Section 87(6)(d) also permits the setting of SMP services conditions requiring the dominant provider to include specified terms and conditions in the RO. Finally, section 87(6)(e) permits the setting of SMP services conditions requiring the dominant provider to make such modifications to the RO as may be directed from time to time.

- 3.138 In terms of implementation of these RO requirements, for network access Openreach is providing as at the date the condition enters into force, we have decided to require Openreach to publish a RO on that same date. In most if not all cases, Openreach would already have a RO published for such network access. For any further network access provided after that date, Openreach would be required to update and publish the RO “as soon as reasonably practicable”, allowing for review, engagement and amendment as necessary in advance of publication.

## Requirement to notify changes to charges, terms and conditions

### Our proposals

- 3.139 We proposed to make Openreach subject to an obligation to notify, in writing (known as an Access Change Notice, or ACN) changes to its charges, terms and conditions for network access products and services in each of the relevant fixed telecoms markets.
- 3.140 We proposed that the notification period should be either 90, or 28 days depending on the charge. We also proposed a notification period of 90 days for changes to commercial terms where the price or other contractual conditions are conditional on the volume and/or range of services purchased.
- 3.141 Aligned to our approach to copper retirement, we proposed to require Openreach to inform its customers and Ofcom when an exchange area has reached 75% coverage of ultrafast broadband and when an exchange area has been completed. We also proposed to require Openreach to give its customers and Ofcom a 12-month advance notice before reaching any of these two thresholds in an exchange area.

### Stakeholder responses

- 3.142 Those stakeholders that commented on our proposals in relation to transparency mostly agreed with our approach.<sup>189</sup>
- 3.143 Vodafone said that the proposed notification periods would allow Openreach to amend a Special Offer by providing only 28 days notice. It said that any change to a Special Offer (regardless of the notice period) would affect any ongoing contractual arrangements and leave telecoms providers at a disadvantage. Vodafone suggested that the notice period for amendments to Special Offers is increased to 90 days.<sup>190</sup>

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<sup>189</sup> BUUK, page 6, TalkTalk, paragraph 6.90; and Telefonica, page 29, in their responses to the January 2020 Consultation.

<sup>190</sup> Vodafone response to the January 2020 Consultation, Annex 1 (Vodafone’s comments on the legal instruments), page 2.

- 3.144 Some stakeholders commented on our proposal to require Openreach to provide 90 days' notification of changes to commercial terms where the price or other contractual conditions are conditional on the volume and/or range of services. We discuss these in Section 7.

### **Our reasoning and decisions<sup>191</sup>**

- 3.145 We consider that the requirement to notify charges, terms and conditions which we have decided to impose in each market is appropriate and proportionate. The minimum notification requirements are:
- a) 90 days for prices, terms and conditions relating to existing services in the relevant fixed telecoms markets
  - b) 28 days for prices, terms and conditions relating to new service introductions;
  - c) 28 days for price reductions and associated conditions (for example, conditions applied to Special Offers) and the end of temporary price reductions, and next working day for extensions of a Special Offer on current T&C at the current Special Offer price or lower price; and
  - d) 90 days for any new or existing product where the price or other contractual conditions are conditional on the volume and/or range of services purchased.
- 3.146 Notification of changes to charges at the wholesale level has the joint purpose of improving transparency for monitoring possible anti-competitive behaviour and giving advance warning of price changes to competing providers who purchase wholesale access services. The latter purpose ensures that competing providers have sufficient time to plan for such changes, as they may want to restructure the prices of their downstream offerings in response to charge changes at the wholesale level. Notifying changes therefore helps to ensure stability in markets.
- 3.147 While price notification may have a 'chilling' effect (where other telecoms providers follow Openreach's prices rather than set prices of their own accord), the relevant fixed telecoms markets are characterised by a high level of reliance by downstream telecoms providers on Openreach's wholesale services. Therefore, we believe it is appropriate for Openreach to be subject to an obligation to notify changes to its charges for wholesale network access services in order to provide the transparency, time to plan for changes and stability needed to facilitate investment and entry.
- 3.148 We also consider it appropriate to impose a requirement that Openreach notifies changes to terms and conditions in order to ensure transparency and provide advance warning of changes to allow competing providers sufficient time to plan for them. For the same reasons as outlined above, we consider that notifying changes to terms and conditions will lead to greater market stability, without which incentives to invest might be undermined and market entry made more difficult.

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<sup>191</sup> We explain our reasoning and decisions in relation to copper retirement in more detail in Section 2.

- 3.149 Regarding the content of the ACN, we have decided that that it should include:
- a) a description of the network access in question;
  - b) a reference as to where the terms and conditions associated with the network access in question can be found in Openreach’s Reference Offer;
  - c) the current and proposed new charge and/or current and proposed new terms and conditions (as the case may be); and
  - d) the date on which, or the period for which, the changes in the ACN will take effect (the “effective date”).

### **Changes to prices and price terms and conditions**

- 3.150 Changes to prices, and related price terms and conditions (in short prices) for the provision of wholesale inputs in fixed telecoms markets could have material impacts on consumers. Thus, we are imposing a requirement on Openreach to give advance notice of price changes.
- 3.151 In regard to the timings of the notification, the notification period should allow sufficient time for downstream providers to make necessary changes to their downstream products and services. We consider that except for the special cases discussed below, Openreach should give 90 days’ notice for changes to prices.
- 3.152 We note TalkTalk’s comment that Openreach should provide more than 90 days’ notice when there are significant increases in electricity prices (for example more than 5%).<sup>192</sup> We do not consider that telecoms providers need more time to make necessary changes to their products and services when Openreach increases the price of electricity compared to when it increases the price of other components of the product cost stack. We discuss our regulation of Openreach’s electricity charges in Volume 4 Section 5.
- 3.153 In the case where prices are being reduced, we recognise that industry and customers benefit from shorter notification periods. For example, there may be advantages in having a shorter notification period for price reductions that could encourage migration to newer or more efficient services. We have decided that 28 days is an appropriate notification period for price reductions for products and services in the relevant fixed telecoms markets.
- 3.154 Where Openreach is providing a Special Offer, customers benefit from a shorter notification period to enable them to react faster to the Special Offer, and maintain flexibility to try new services and transition over to the newly priced service, which will benefit consumers through new services and greater availability of choice. We have decided that 28 days is an appropriate notification period for Special Offers. We discuss extensions and amendments to Special Offers below.
- 3.155 Where Openreach introduces a new product or service in the relevant fixed telecoms markets, we consider that the prior notification period should reflect the lesser need for

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<sup>192</sup> [TalkTalk](#) response to the February 2020 Consultation, paragraphs 4.1-4.6.

advance notice, since there will not be existing customers for whom wholesale price changes might require revisions to their own pricing or other commercial decisions, and the existing service(s) provide the core set of input services for downstream telecoms providers, and are protected by the longer notification period. We have decided that 28 days is an appropriate notification period for new products and services.

- 3.156 Notwithstanding the discussion above, as explained in Section 7, we are concerned that in the WLA and LL Access markets some loyalty-inducing commercial terms could undermine or deter alternative network rollout. To facilitate the monitoring of these commercial terms, we have decided to impose a requirement in these markets for Openreach to notify contract/pricing changes 90 days in advance specifically for pricing structures where the price or other contractual conditions are conditional on the volume and/or range of services purchased.

### **Changes to non-price terms and conditions**

- 3.157 Changes to non-price terms and conditions for the provision of wholesale inputs in fixed telecoms markets could also have material impacts on consumers. We consider that 90 days is an appropriate notification period for existing and new products and services in the relevant fixed telecoms markets and so have decided to impose an obligation that, in general, at least 90 days' notification should be given for changes to non-price terms and conditions.
- 3.158 We do not consider that, where Openreach plans service development and service launches, the requirement to notify changes to terms and conditions would be problematic, as we believe there is sufficient time in the development cycle of a new service to inform its customers of changes to the terms and conditions.

### **Extensions and amendments to Special Offers**

- 3.159 A 90-day notification period has a potentially negative impact on Openreach's ability to amend Special Offer non-price terms and conditions, due to the misalignment of 28 days' notice for launching a Special Offer and/or changing prices, compared to 90 days' notice to change the terms and conditions of the Special Offer. This has the potential to make it difficult for Openreach to launch Special Offers or to amend Special Offers in their lifetimes, even when it might be beneficial to customers to do so. Therefore, we have decided to require Openreach to provide only 28 days' notice where it plans to amend the non-price terms and conditions of a Special Offer.
- 3.160 We also have decided to allow Openreach, where it has notified its customers of the price that will apply at the end of the Special Offer, to extend the Special Offer. Where the extension is at the current Special Offer price or below, Openreach must provide one working day's notice. Where Openreach extends the offer at another price that is below the one originally notified as the price to apply when the original Special Offer ended, we have decided to impose 28 days' notice. We have outlined the notification periods that will apply for where Special Offers are extended or amended in Table 3.3.

**Table 3.3: Notification periods on Openreach for amending or extending Special Offers**

Amendment to Special Offer	Amendment concerns	Notification period
If Openreach wants to extend a Special Offer on current T&C at the current Special Offer price or lower price	Prices	Next working day
If Openreach wants to extend a Special Offer on current T&Cs at a price above the initial Special Offer price but below the standard price	Prices	28 days
If Openreach wants to extend a special offer on updated T&Cs or amend T&Cs of existing Special Offer, irrespective of price	T&Cs	28 days

3.161 For avoidance of doubt, the notification periods we impose on Openreach for amending or extending Special Offers cannot supersede the requirement in the WLA and LL Access markets for Openreach to notify contract/pricing changes 90 days in advance specifically for pricing structures where the price or other contractual conditions are conditional on the volume and/or range of services purchased.

#### **Requirement to notify Ofcom of changes to charges, terms and conditions in relation to Openreach's internal consumption of services in the relevant fixed telecoms markets**

3.162 For each relevant fixed telecoms market, we have decided to require Openreach to notify us of changes to charges, terms and conditions in relation to its internal consumption of any services in the relevant fixed telecoms markets.

3.163 In relation to passive remedies, while Openreach does not consume physical infrastructure and dark fibre services, we are imposing a requirement on Openreach to produce an IRO that sets out its internal processes (see paragraph 3.127 above). In order to ensure transparency, we have decided to require Openreach to notify us where these internal processes change.

#### **Notifications in relation to copper retirement**

3.164 Our approach to copper retirement means that, in a given exchange area where Openreach has reached 75% coverage of ultrafast broadband services or where it has completed the deployment of such services, our regulation will be relaxed such that Openreach can change certain charges, terms and/or conditions for its services. To ensure transparency for monitoring possible anti-competitive behaviour and to give competing

providers sufficient notice, we have decided to require Openreach to make four additional public notifications for its customers and to Ofcom:

- a) a 12-month advance notice before an exchange area is expected to reach 75% coverage of ultrafast broadband;
- b) a notice that an exchange area has reached 75% coverage of ultrafast broadband;
- c) a 12-month advance notice before an exchange area is expected to be “completed”;
- d) a notice that an exchange area has been completed; and
- e) a 24-month advance notice of removal of copper access when copper take up is less than 10% and appropriate protections have been put in place for vulnerable consumers.<sup>193</sup>

## Conclusion

3.165 We consider that the requirement to notify charges, terms and conditions is proportionate in that it only requires that information that other telecoms providers would need to know (in order to adjust for any changes) would have to be notified and that the notification periods are the minimum required to allow changes to be reflected in downstream offers. To implement these decisions, we are setting SMP Condition 8 in Volume 7. Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency.

## Requirement to notify technical information

### Our proposals

3.166 We proposed to require Openreach to publish, in advance, changes to technical information in each relevant fixed telecoms market. We proposed Openreach should notify its customers of changes to technical information not less than 90 days in advance of providing new services or amending existing technical terms and conditions.

### Stakeholder responses

3.167 Stakeholders did not comment on our proposals for the requirement to notify changes to technical information.

### Our reasoning and decisions

3.168 We consider that a requirement to notify technical information in each relevant fixed telecoms market is appropriate and proportionate.

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<sup>193</sup> See timeline for regulatory transition from copper to fibre, in Section 2: such 24-month advance notice can be given any time from issuing a notice that an exchange area has been completed, subject to other criteria being met.

- 3.169 The aim of this regulation is to provide advance notification of changes to technical characteristics to ensure that telecoms providers have sufficient time to respond to changes made by Openreach that may affect them. For example, they may need to introduce new equipment or modify existing equipment or systems to support a new or changed technical interface, or to make changes to their networks in order to support changes in the points of network access or configuration.
- 3.170 This remedy is important in the fixed telecoms markets to ensure that providers who compete in downstream markets are able to make effective use of existing or, where applicable, new wholesale services provided by Openreach. The technical information required by other providers includes:
- new or amended technical characteristics, including information on network configuration (e.g. information about the function and connectivity of points of access, such as the connectivity of exchanges to customers and other exchanges), locations of the points of network access, and technical standards (including any usage restrictions and other security issues);
  - the information provided currently in the Network Information Publication Principles (NIPP) and Access Network Facilities (ANF) agreement; and
  - any other additional information necessary to make use of the services provided in the relevant fixed telecoms markets.
- 3.171 We believe that 90 days is the minimum time that competing providers need to make modifications to their network to support changes.
- 3.172 The one exception to this is in relation to amendments to technical specifications that are developed and agreed through NICC Standards Limited.<sup>194</sup> NICC is a technical forum for the UK communications sector that develops interoperability standards for public communications networks and services in the UK. NICC specifications are developed by subject matter experts from Openreach and other telecoms providers and are adopted only with the approval of NICC members. In view of these arrangements, we do not consider it necessary to implement a 90-day notice period where Openreach proposes to adopt an amended NICC specification, as telecoms providers are likely to already be aware of NICC specifications due to their participation in the forum (and will therefore be satisfied that they have been agreed by industry, and not imposed by Openreach unilaterally). We do, however, consider that Openreach must provide notification of changes based on the NICC standard within a reasonable period of time, but without imposing a minimum notification period. This is to ensure that published technical information is up to date, as without an obligation to notify changes based on NICC standards, service descriptions for various wholesale services could be out of date or incomplete. Our SMP condition reflects this position.

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<sup>194</sup> NICC. [Developing interoperability standards for the UK](#), [accessed 11 March 2021].

## Conclusion

- 3.173 We consider that the requirement to notify technical information is proportionate in that it only requires information that other telecoms providers would need to know and that the notification periods are the minimum required to allow changes to be reflected in downstream offers.
- 3.174 To give effect to these decisions we are imposing SMP Condition 9 at Volume 7. As set out above section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency.

## Requirement for quality of service (QoS)

- 3.175 We have decided to impose on Openreach an SMP condition that allows us to set directions specifying quality of service (QoS) standards and reporting requirements in relation to Openreach's QoS performance for services in all relevant fixed telecoms markets. Our detailed reasoning and decisions on QoS requirements are set out in Volume 5.

## Regulatory Financial Reporting

- 3.176 We have decided to impose accounting separation and cost accounting obligations on Openreach in each of the relevant fixed telecoms markets. We implement these obligations by way of a single SMP Condition and associated directions (see Volume 7) which specify what information we require BT to prepare and provide for each market. Further details of the accounting separation and cost accounting obligations, and our detailed regulatory financial reporting requirements are set out in Volume 6.

## Other stakeholder comments

- 3.177 CityFibre raised a number of demand side issues. They argued that consumers are confused by the advertising terms used to sell fibre services, and that Ofcom should change the General Conditions of Entitlement to remove any potential confusion. They also wanted the switching process to be made easier.<sup>195</sup>

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<sup>195</sup> CityFibre response to the January 2020 Consultation, pages 141 to 147. [redacted] [A confidential respondent] also noted that "the development of an industry-wide GPL switching platform can also provide a platform for the market to allow ISPs to efficiently buy wholesale services from altnets, if an altnet wholesale platform is developed as an add-on to it." [redacted] [a confidential respondent] response to the January 2020 Consultation, page 2.

## Our response

- 3.178 We note that the High Court has handed down its judgment in CityFibre’s judicial review of the ASA’s decision in respect of the advertising that telecoms providers can use for broadband services.<sup>196</sup>
- 3.179 We said in our 2020/21 plan of work that this is an area of focus for us. Ofcom is a member of the Gigabit Take-Up Advisory Group (GigaTAG) being led by Which? that will look into government support for investment and consumer protections for the broadband market. We expect industry to lead on the development of suitable agreements on marketing broadband services to consumers. We also note that the PSTN and copper retirement are likely to be considered in these developments.
- 3.180 Ofcom has recently decided to introduce new switching and information protections for consumers<sup>197</sup> and is currently consulting on a new process to simplify switching for residential landline and broadband consumers. This process would apply to switching between providers on all networks and between copper and fibre networks, thereby helping consumers take advantage of the range of services available to find the best product and price to meet their needs.<sup>198</sup>

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<sup>196</sup> [R \(oao CityFibre Limited\) v Advertising Standards Authority](#), 15 April, 2019, [accessed 11 March 2021]. We also note the [research](#) that the ASA carried out on this issue, [accessed 11 March 2021].

<sup>197</sup> Ofcom 2020. *Statement: Implementation of the new European Electronic Communications Code*.

<sup>198</sup> Ofcom 2021. [Consultation: Quick, easy and reliable switching](#), [accessed 11 March 2021].

## 4. Specific remedies: physical infrastructure market

- 4.1 In this section, we set out our decision to impose on Openreach a requirement to provide specific network access in the form of physical infrastructure access (PIA). This requirement applies in addition to the general network access obligation we impose in the physical infrastructure market. We also set out our decisions to require Openreach to provide PIA ancillary services and publish a PIA reference offer.
- 4.2 This remedy is designed to address our competition concerns in the physical infrastructure market, which we set out at Volume 2 Section 5. An effective PIA remedy is key to our strategy as it secures the access to Openreach’s physical infrastructure that will help support other telecoms providers in deploying competing fibre networks at scale.

**Table 4.1: Summary of specific remedies**

Specific remedies
Specific access obligation to provide Physical Infrastructure Access (PIA), including network adjustments
Specific requirement to provide PIA ancillary services
Specific requirements for the publication of a Reference Offer (RO)

- 4.3 Since we updated the PIA requirement in 2018, the industry has worked (primary through the PIA Product and Commercial Group, or PCG<sup>199</sup>) to implement and develop PIA so that it can meet the needs of telecoms providers using PIA to roll out new fibre networks. More recently, the industry has identified five priority areas of work – the ‘five initiatives’ in order to ensure PIA can better meet the needs to telecoms providers rolling out new fibre networks at scale.<sup>200</sup>
- 4.4 In our 2020 Openreach Monitoring Unit Annual Monitoring Report, we reported growing interest in use of PIA and high levels of performance, such as the management of network adjustments.<sup>201</sup> However, we said that more needs to be done to ensure PIA is effective. We noted that Openreach had made efforts to engage with network operators but that some network operators do not always feel that they are receiving fair and equal treatment.<sup>202</sup> The report highlighted the ongoing monitoring of progress with PIA product developments, and we called for enhanced communication about Openreach’s internal processes to help it demonstrate compliance with the non-discrimination obligations. We

<sup>199</sup> Previously called the Passives Industry Working Group (P-IWG).

<sup>200</sup> Minutes of 7<sup>th</sup> CEO’s meeting on PIA implementation, 29 September 2020.

<sup>201</sup> Ofcom, 19 November 2020, Openreach Monitoring Unit’s Annual Monitoring Report 2020

<sup>202</sup> In relation to this, see CityFibre response to the January 2020 Consultation, paragraph 5.49. This analysis is supported by Hyperoptic in its response to the January 2020 Consultation when discussing ‘Cost of non-equivalence’, page 8.

respond to stakeholder feedback on implementation of PIA at the end of this section and include guidance on PIA network adjustments and NUD obligations in Annex 8.

## Specific access obligation to provide PIA

### Our proposals

4.5 We proposed a network access remedy in the form of PIA requiring Openreach to allow other telecoms providers access to deploy their own networks in its underground ducts and chambers and overhead on its telegraph poles. We proposed that the PIA product should have no usage or geographic scope restrictions.

### Stakeholder responses

4.6 Most respondents agreed with the importance of a specific access obligation to provide PIA.<sup>203</sup> Respondents raised various concerns with the implementation of the remedy which we deal with below.

4.7 Openreach said that while it supported our high-level objectives and, by extension, our proposed specific remedies, it had concerns about the proposed PIA remedy. It asked for clarity as to the primary purpose of the obligation and proposed restricting the scope of PIA to the provision of fixed telecoms networks. It noted that it might still be possible for it to agree commercial arrangements for access outside the scope of the PIA remedy.<sup>204</sup>

### Our reasoning and decisions

4.8 We have decided to impose a requirement to provide network access in the form of PIA, as proposed in our consultation. We consider that:

- a specific network access requirement for PIA is necessary to address BT's SMP in the physical infrastructure market;
- usage or geographic scope restrictions on PIA would risk undermining the effectiveness of the remedy; and
- any adverse impacts of PIA are proportionate to our overall aim.

4.9 We have decided to impose a charge control on PIA. This is to address the risk of excessive pricing and allow Openreach to recover its costs. We consider that a charge control provides certainty to competing telecoms providers over the level of charges and support an effective PIA remedy. Consistent with our approach in the 2019 PIMR, we impose a

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<sup>203</sup> Joint submission from CityFibre, Glide, Hyperoptic, Nextgenaccess, Telefonica, Virgin Media and Vodafone, paragraphs 1-3; Axione, paragraphs 1.3-1.4, 6.14; BUUK, page 1; Cumbria County Council, answer to Volume 3, Question 4.1; Cityfibre, paragraph 5.40; [Connect Fibre](#), page 1; County Broadband, paragraphs 14, 29-31; Gigaclear, paragraphs 101-104; Hyperoptic, page 3; INCA, paragraph 158; PAG, paragraph 5.4; Scottish Government, page 3; SSE, answer to Volume 3, Question 4.1; TalkTalk, paragraph 8.31; Telefonica, paragraphs 3.5-3.6; Three, paragraph 16.1; [Virgin Media](#), paragraphs 40; Welsh Government, page 2; [§<] [a confidential respondent], answer to Volume 3, Question 1.1; and [§<] [a confidential respondent], answer to Volume 3, Question 4.1; in their responses to the January 2020 Consultation.

<sup>204</sup> Openreach response to the January 2020 Consultation, paragraphs 6.127-6.134.

charge control on duct, pole and footway box rentals. Details of the charge control are set out in Volume 4.

4.10 We set out our reasoning below.

**A specific network access remedy is necessary to address BT's SMP in the physical infrastructure market**

4.11 Given our conclusion that BT has SMP in the physical infrastructure market, we consider that absent regulation Openreach would have the incentive and ability to favour BT's downstream businesses over competing telecoms providers in the relevant downstream markets, distorting competition in these markets, which is ultimately against the interests of consumers. Openreach could refuse access to its physical infrastructure, or it could provide access to its physical infrastructure on less favourable terms and conditions compared to those obtained by its own downstream businesses.

4.12 Although the general network access remedy we impose in Section 3 is aimed at addressing these competition concerns, it does not provide telecoms providers with as much certainty as to the basis on which they have access. As explained in Volume 2 Section 5 and discussed above, our view is that BT's SMP in the physical infrastructure market is entrenched and enduring, leading to a significant competitive imbalance between BT and alternative telecoms providers. More rapid developments in the market are needed than can be achieved by the general network access remedy alone. Maintaining PIA ensures that we are imposing an effective remedy which we anticipate will lower the cost and increase the speed of deploying competing networks and facilitate greater competition in downstream markets. On that basis, we consider that it is appropriate and proportionate to go beyond the general network access obligation to address the above concerns and require Openreach to continue to provide a specific form of network access.

4.13 When considering the form of our network access obligation, our starting point is to consider imposing a network access obligation without any restrictions on usage or geographic scope. In most instances where we impose network access obligations, such restrictions are unnecessary as the obligations are typically not expected to result in effects on products in other markets. In addition, restrictions present a risk of regulatory failure as they may limit a telecoms providers' flexibility to use the remedy in ways not foreseen by the regulator but nevertheless consistent with the intended purpose of the remedy, which may reduce the effectiveness of the remedy. Therefore, in most cases, imposing an unrestricted network access obligation is both appropriate and proportionate.

4.14 However, to a greater extent than other forms of network access, a PIA obligation can be used as an upstream input into several downstream products; a PIA remedy without usage or geographic scope restrictions can be used in the deployment of any service in any location and some of these uses and locations will impact on downstream markets. In particular, there might be a risk that a PIA remedy may impact competition in downstream markets that are already competitive, stifle dynamic and allocative efficiency, increase the cost of competition and Openreach's costs and resource requirements, and cause some unintended effects related to network adjustments. We have therefore considered:

- the impact of any usage or geographic scope restrictions on the effectiveness of PIA in the physical infrastructure market; and
- the potential impact of PIA on downstream markets.

### **Imposing restrictions on the use of PIA would risk undermining its effectiveness**

- 4.15 As explained above, we have decided to require Openreach to provide PIA to address its incentive and ability to refuse or impede access to BT's physical infrastructure which arises out of its SMP in that infrastructure. In doing so, our aim is to facilitate third party network build using BT's infrastructure nationally which in turn will promote competition in downstream services. We consider that imposing usage or geographic scope restrictions on PIA risks undermining the effectiveness of PIA in achieving this aim.
- 4.16 Usage restrictions would undermine the effectiveness of PIA. Limiting technological flexibility and/or limiting the scope of the PIA remedy is likely to materially increase the risk that a telecoms provider takes the view that it is not viable to invest. For example, a fibre network is costly to build, but once deployed has almost limitless capacity. The commercial business case for the initial investment therefore typically relies on using this capacity to generate as many different revenue streams as possible, through a wide range of different services.<sup>205</sup>
- 4.17 We have not made Openreach's proposed change to the legal definition of Physical Infrastructure Access to restrict the scope of PIA to the provision of fixed telecoms networks. To reflect the technical capabilities of full-fibre networks, we consider access to networks and services holistically, with ducts and poles access being designed to enable competing providers to drive innovation and investment in underlying networks. We do not intend for the PIA remedy to be used outside the relevant fixed telecoms markets and we consider the purpose of the remedy is already clear. However, placing restrictions based on characteristics of a fixed telecoms network could limit telecoms providers' flexibility to use the remedy in ways that we have not foreseen, but nevertheless consistent with the intended purpose of the remedy.
- 4.18 Any restrictions placed on the geographic scope of the PIA remedy would also impede its effectiveness. Any networks built now are likely to differ substantially in terms of architecture from BT's legacy network. Therefore, such a restriction would limit network architecture to that of BT's network and in doing so deter network investment and impede innovation. In the absence of restrictions, telecoms providers are able to adopt different engineering design principles compared to Openreach without any artificial constraints imposed as a result of BT's current (or future) network design.

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<sup>205</sup> We set out in more detail the importance of technological flexibility to meet future demand and economies of scope in paragraphs 2.115-2.140 of Volume 3, 2018 WLA Statement. See also CityFibre response to the 2018 PIMR Consultation, paragraphs 7.1.1-7.1.2; IIG response to the 2018 PIMR, 2018 BCMR and 2018 BT RFR Consultations, paragraphs 14.1.1-14.1.3; TalkTalk response to the 2018 PIMR Consultation, paragraph 5.15; Virgin Media response to the 2018 PIMR Consultation, page 22; and [redacted] [a confidential respondent] response to the 2018 PIMR Consultation, paragraphs 8.1.1-8.1.2.

- 4.19 We also consider restricting the flexibility of network builders to provide downstream services on either a service or geographic basis will impede their ability to compete downstream. To allow for effective network competition, network builders require flexibility at least equivalent to that of Openreach. Openreach is able to use any part of BT's physical infrastructure without any restrictions to deploy telecoms networks for any purpose and in any location. For example, by deploying fibre cables that will be used to serve both residential and business customers, Openreach is able to leverage the cost savings and potential revenue benefits of both markets, while using the most cost-effective routes in its physical infrastructure. We therefore believe that for downstream competition to become effective, the same flexibility and the same opportunity for efficiency gains needs to be available to all PIA users.
- 4.20 Another possible approach would be to impose targeted usage or geographic scope restrictions to prevent the use of PIA in respect of downstream markets that are already competitive. However, we consider that such an approach would still undermine network investment for the reasons set out above and be unworkable in practice. We set out below two examples of possible restrictions and explain why these would be inappropriate.
- 4.21 In Volume 2 Section 8, we conclude that BT does not have SMP in the provision of LL Access services in the CLA. We remain of the view that a restriction which prevents the use of PIA for leased lines in this geographic area will render the remedy ineffective:
- A restriction on the use of PIA for leased lines in the CLA would reduce the incentives for investment for PIA users deploying telecoms networks at scale, as they could potentially face higher costs (through needing longer routes to connect BT's physical infrastructure with that of other telecoms providers in the CLA), less flexibility (they may be unable to change the downstream services that rely on PIA) and a possible barrier to entry (as BT would have to confirm the acceptability of an access request based on the services that will be offered).
  - Defining access with reference to service type inherently works against innovation as it restricts requests to access for currently recognised services. This would reduce the incentives for deployment of contemporary telecoms networks where the delineation between broadband and leased line services continues to lose its relevancy.
- 4.22 Similarly, excluding the use of certain Inter-Exchange Connectivity routes for leased lines purposes<sup>206</sup> from the scope of the PIA remedy would impose restrictions on the type of networks PIA users can deploy, both in term of the services they carry and their architecture. While ducts may serve inter-exchange BT routes, they may be equally valuable to telecoms providers wishing to deploy multiservice networks and/or novel network designs. Restrictions of this nature would therefore increase the cost of

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<sup>206</sup> Inter-exchange routes are an artefact of BT network topology. PSTN networks use twisted-pair copper telephone lines to transmit voice calls. The signal attenuation of copper lines limits their effective range to about 4.5km. This has restricted the length and location of BT's duct and pole infrastructure and the size, location and number of BT's local exchanges. By contrast, contemporary telecoms networks using fibre technologies can support an operating range of about 70km.

alternative network deployment, while allowing Openreach to retain the flexible use of such duct reinforcing their SMP position.

4.23 We therefore consider that imposing any restrictions on the PIA remedy will render it ineffective.

#### **Any adverse impacts of PIA are proportionate to our overall aim**

4.24 Given our view that the effectiveness of the PIA remedy would be undermined by imposing usage or geographic scope restrictions, we have considered the potential impact of our approach on downstream markets to assess whether there are any adverse effects arising which are disproportionate to our overall aim.

4.25 We have decided that in this review period any adverse effects arising are not disproportionate to our overall aim for the reasons set out in Annex 7. Annex 7 sets out our analysis of the:

- impact on dynamic efficiency;
- impact on BT's pricing structure;
- impact on cost of competition;
- impact on competitive markets; and
- externalities caused by our approach to network adjustments costs<sup>207</sup>.

4.26 For the reasons set out in Annex 7 and in the discussion of network adjustments below, we consider that our decisions go no further than is necessary to address BT's SMP in the physical infrastructure market.

#### **Future impact on capacity**

4.27 While we acknowledged that parts of BT's physical infrastructure might reach its maximum capacity in future due to deployment of competing networks, this was not a concern raised by telecoms providers. The extent to which any future points of congestion have a material impact on overall network deployment remains unclear, in part because there is potential for additional capacity being established in parts of the network as copper infrastructure is switched off. Consumption of the physical infrastructure is a desired outcome of our regulation and a step towards achieving our strategic goal of network competition.

4.28 Therefore, we do not think it is appropriate, at this time, to impose additional rules to mitigate capacity issues, such as any usage or geographic scope restrictions on the PIA remedy.

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<sup>207</sup> Network adjustments are changes to the physical infrastructure that Openreach is required to undertake to make it available to other telecoms providers, and network adjustment costs are the costs that Openreach incurs to make these changes. For example, this might include repairing a collapsed duct to make it useable.

## Network adjustments

### Our proposals

- 4.29 We proposed that the PIA obligation includes a requirement on Openreach to make adjustments to its physical infrastructure network (network adjustments) in certain specific circumstances.

### Stakeholder responses

- 4.30 Openreach broadly agreed with the proposed network adjustments requirement. It said it had established highly efficient controls for PIA network adjustments under current regulations<sup>208</sup> but argued many operational and financial concerns remain. Openreach said it needs at a minimum to have strong financial and budgetary controls and authority over any costs incurred (per job and in total), and it should be expected that it will not accept requests or pay for invalid network amendments. Openreach sought the retention of the current network adjustment requirements and supporting guidance.<sup>209</sup>
- 4.31 Other telecoms providers raised a number of specific concerns related to the PIA network adjustment process and Openreach's approach to resolving issues raised by them. We discuss these in the "PIA implementation" subsection below.

### Our reasoning and decisions

- 4.32 We have decided that our PIA obligation should continue to require Openreach to make adjustments to its physical infrastructure network in the circumstances explained below.

#### Openreach should be required to make adjustments to its infrastructure where it is unusable

- 4.33 Telecoms providers using PIA to deploy a competing network will encounter sections of infrastructure that they cannot use, either because the existing infrastructure is faulty or because there is insufficient capacity in that section. For the reasons set out below, our view is that the PIA remedy will be ineffective unless Openreach is required to adjust the physical infrastructure network to make it available for use in certain circumstances.
- 4.34 Our reason for requiring Openreach to provide network access in the form of PIA is to promote competition by facilitating third-party investment in competing networks. We consider that the efficiencies arising out of deploying a network using PIA, instead of building a new physical infrastructure network, will facilitate investment which would not otherwise be viable. In particular, competing telecoms providers avoid the costs and time associated with duplicating the physical infrastructure network, and instead only pay a

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<sup>208</sup> Openreach referred to KPIs which compare its network adjustment performance for PIA and its 'own-use' products for the purposes of monitoring no undue discrimination.

<sup>209</sup> Openreach response to the January 2020 Consultation, paragraphs 6.135-6.145.

share of the costs of the existing physical infrastructure. Our objective in imposing PIA is to unlock these efficiencies to the greatest extent possible to help facilitate such investment.

- 4.35 When a telecoms provider encounters an unusable section of BT's physical infrastructure it will be necessary to overcome this. One approach would be for telecoms providers to install their own ducts or poles alongside BT's to circumvent the unusable section in BT's infrastructure. Another approach would be for Openreach to adjust the existing physical infrastructure to remedy the unusable section, for example, by repairing the faulty infrastructure or installing additional capacity where the existing capacity is full.
- 4.36 Given the range of options available to Openreach to overcome unusable sections of infrastructure, it will sometimes be more efficient (i.e. quicker, easier and/or cheaper) for Openreach to adjust the existing physical infrastructure than for a telecoms provider to install their own infrastructure alongside BT's. For example, it may cost less for Openreach to repair faulty infrastructure than for a telecoms provider to build new, parallel infrastructure.
- 4.37 Without a requirement on Openreach to adjust the existing physical infrastructure in these cases, telecoms providers deploying competing networks would need to incur additional cost and/or delay building their own infrastructure to overcome unusable sections of BT's physical infrastructure. The deployment of competing networks will therefore entail unnecessary duplication of the physical infrastructure network, and the benefits from sharing BT's existing physical infrastructure will not be fully realised. Ultimately, this will reduce the scope for competitive network investment, and in general the remedy will be less effective.
- 4.38 Moreover, requiring telecoms providers to install their own infrastructure to bypass the unusable sections would not ensure a level playing field with Openreach in those cases where it can overcome unusable sections of infrastructure at lower cost in any competing network deployment of its own (for example, an FTTP deployment). Knowing that Openreach has this competitive advantage could undermine incentives to invest in competing networks in the first place, rendering the PIA remedy ineffective as a basis for scale rollout of competing networks.
- 4.39 Therefore, we have decided that the PIA access obligation should extend to requiring Openreach to make adjustments to its network where this is necessary for its physical infrastructure to be available to telecoms providers for the purpose of deploying their own networks. This will promote network competition by realising greater efficiency benefits from sharing BT's existing physical infrastructure and ensuring a level playing field with Openreach. Without such a requirement, the benefits resulting from other telecoms providers deploying ultrafast networks at scale are unlikely to be realised in full.
- 4.40 For the avoidance of doubt, we are clarifying that the requirement to make network adjustments applies irrespective of whether a telecoms provider is using the infrastructure for the first time (e.g. installing its first sub-duct), or a subsequent time (e.g. installing a second sub-duct to increase capacity in its network). For example, a telecoms provider attempting to install a second sub-duct may find that the duct has collapsed since installing

the first sub-duct. The obligation to make the physical infrastructure usable still applies in these circumstances.<sup>210</sup>

### The requirement to make network adjustments is limited

- 4.41 We have considered the approach we should take to specifying the extent of the obligation on Openreach to make adjustments to its network. In our view, specifying the precise extent of this obligation in the SMP Condition carries a risk of regulatory failure given that what is necessary is likely to depend on the specific circumstances of any case. Given the risk of regulatory failure, we do not believe it is appropriate to set prescriptive rules about which types of adjustments are included in the obligation. We have therefore decided to supplement the general and specific network access requirements with largely the same guidance as we previously issued on where this obligation would apply.<sup>211</sup>
- 4.42 At Annex 8, we identify what criteria should be applied to determine whether a particular network adjustment falls within the scope of the PIA obligation. The three criteria are:
- **Is the requested adjustment necessary?** This criterion considers whether an alternative option exists which would render the requested adjustment unnecessary, provided this alternative allows for a reasonably equivalent outcome for the telecoms provider compared to making an adjustment.
  - **Is the requested adjustment feasible?** This criterion considers whether there are barriers that prevent Openreach from being able to make the required adjustment.
  - **Does the requested adjustment improve efficiency?** This criterion considers whether the requested adjustment promotes efficiency and is therefore consistent with the rationale for requiring Openreach to provide PIA (i.e. to unlock the efficiencies from sharing existing infrastructure).
- 4.43 The application of these criteria and guidance will determine whether a network adjustment request is valid and, therefore, which network adjustment requests Openreach will have to accept and/or how it should recover its costs as set out in Volume 4.
- 4.44 We consider that the package of measures we are imposing, including the three criteria and the guidance we provide in Annex 8 on their application, will ensure that Openreach has sufficient scope to implement any appropriate financial and budgetary controls and authority over any costs incurred (per job and in total). We recognise that PIA users are able to undertake network adjustments themselves, although currently this has implications for seeking costs later and for the SLA and SLG obligations.

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<sup>210</sup> To ensure PIA users are able to gain access to Openreach's physical infrastructure effectively during, and subsequent to, the process of fibre deployment, PIA network adjustments, including the funds made available under these regulations, should not be time limited. This is because adjustments to lead-in duct, or adjustments to relieve capacity pinch-points in spine duct which connects to lead-in duct may only be discovered when a customer requests service, and not during the initial build phase. The network adjustment fund is also available to fund subsequent network adjustments for additional spine duct that fall within the allowable cross-sectional space budget of the duct in which it is being installed (and for which incremental spine rental charges are not payable).

<sup>211</sup> We have made clarifications in relation to re-cabling activities and network adjustments required subsequent to the initial order. We have also updated our guidance to reflect our assessment of the relevant factors under s.87(4) of the Act that were added to the legislation during the consultation period.

## Specific requirement to provide PIA ancillary services

### Our proposals

4.45 In support of the network access obligation, we proposed to require Openreach to provide PIA ancillary services as may be reasonably necessary for the use of PIA, including as a minimum<sup>212</sup>: power, accommodation services (such as PIA Co-Location and PIA Co-Mingling)<sup>213</sup>, PIA Site Access (access to equipment that the telecoms provider has in a BT telephone exchange or equivalent) and PIA Database Access<sup>214</sup>.

### Stakeholder responses

4.46 Openreach supported the proposal for it to provide PIA ancillary services but indicated some PIA users sought broad interpretations of the requirements, such as in relation to wayleaves.<sup>215</sup>

4.47 Hyperoptic stated that telecoms providers are required by Openreach to purchase ancillary products that Openreach does not use itself, such as Cablelink, which is inflating the costs of competitive fibre deployment.<sup>216</sup> Virgin Media made a similar point about Openreach charges for access to wayleaves information. It said this process is cost prohibitive and not suitable for scale use.<sup>217</sup>

4.48 Some PIA users said that key information<sup>218</sup> relating to shareable wayleaves held by Openreach was unavailable via the PIA Database which acts as an impediment to efficient fibre deployment using PIA. They asked Ofcom to provide clarity in relation to access to such information.<sup>219</sup>

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<sup>212</sup> PIA ancillary services include Cablelink, such as for the interoperability and use of equipment installed by a telecoms provider within an exchange.

<sup>213</sup> These involve the provision of space and the ability to house equipment in a BT telephone exchange or equivalent.

<sup>214</sup> PIA Database Access involves access to data that supports planning the deployment of a network over Openreach's physical infrastructure.

<sup>215</sup> Openreach response to the January 2020 Consultation, paragraph 6.148. Openreach explained that a 'wayleave' is a private contract between a landowner and the holder of the wayleave which grants a right of way to the holder for a specific purpose, generally in return for a fee. It stated wayleaves are primarily governed by contract, privacy and property law to give due consideration to the rights of landowners, therefore Openreach considers the subject to be outside the scope of SMP regulation and WFTMR access obligations. In its response dated 24 February 2021 to s.135 notice dated 10 February 2021, pages 4-5, Openreach said it shares its infrastructure under the terms of its PIA product. If that infrastructure is subject to a wayleave under the new Code then telecoms providers may be able to benefit from paragraph 17 of the new Code to avoid the need for a new wayleave but that depends on the circumstances of their build and on the basis that in all cases they need prior consent to enter private land. Openreach considers its policy helps to ensure it complies both with its regulatory obligations to share infrastructure and with its obligations, under contract and law, to the relevant landowner. Openreach notes that many wayleaves are not on its standard terms due to the specific requirements of landowners.

<sup>216</sup> Hyperoptic response to the January 2020 Consultation, page 8.

<sup>217</sup> [Virgin Media](#) response to the November 2020 Consultation, Annex 1, page 15.

<sup>218</sup> We understand that the principal issue is that Openreach provides the postcode only and not the full address of the premises where a wayleave exists.

<sup>219</sup> Joint submission from CityFibre, Glide, Hyperoptic, Nextgenaccess, Telefonica, Virgin Media and Vodafone, paragraphs 46-48; CityFibre, paragraph 5.38 and Table 5.2; Three, paragraphs 17.9-17.13; and PAG, paragraph 6.9; in their responses to the January 2020 Consultation.

## Our reasoning and decisions

- 4.49 We continue to believe that it is appropriate and proportionate to require Openreach to provide PIA ancillary services. A requirement to offer access to ancillary services has the purpose of assisting in promoting competition in downstream markets. We consider that such ancillary services are necessary to support the provision and use of PIA.<sup>220</sup>
- 4.50 We have decided that our specific access remedy should require Openreach to provide these ancillary services, including as a minimum: power, accommodation services (including PIA Co-Location and PIA Co-Mingling), site access, Cablelink<sup>221</sup> and PIA Database Access,<sup>222</sup> and any other services used to support or enable this specific PIA service.<sup>223</sup>
- 4.51 We note that we have decided to regulate Openreach's charges for PIA ancillaries. This is discussed in detail in Volume 4 Section 6.

### Wayleaves

- 4.52 While Openreach claim no requirement should be imposed in relation to wayleaves information, it does recognise the value of the information relating to shared wayleaves that may allow rights of access to PIA users. Based on this, Openreach provides some information on wayleaves that it has obtained since December 2017 to which access rights may benefit PIA users under the Electronic Communications Code (the Code).<sup>224</sup> Stakeholders that responded to our consultation confirmed the importance of information relating to sites where shared wayleaves exist in relation to Openreach's physical infrastructure.<sup>225</sup>
- 4.53 Given the importance of wayleaves information, we note the requests made by PIA users for it to be easily accessible and in a format that supports large scale use of PIA, in line with

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<sup>220</sup> For example, having access to sites where a telecoms provider locates its electronic equipment for the purposes of deploying a network using unrestricted PIA.

<sup>221</sup> Cablelink is a necessary PIA ancillary service because PIA gets a telecoms provider into a co-location space within an exchange where they can put their equipment, but if they want to connect between co-location spaces within the same exchange or connect to a third party network just outside the exchange, then Cablelink is necessary.

<sup>222</sup> In support of this obligation, we consider that network records should be provided in a digital format where available.

<sup>223</sup> Openreach has told us that it uses multiple data sources and over two hundred data points to plan its fibre networks (Openreach response dated 26 February 2021 to the s. 135 notice dated 16 February 2021, question 11). We interpret the no undue discrimination obligation we are imposing on Openreach as requiring strict equivalence where possible with discrimination permitted only in cases where Openreach can demonstrate that a difference in respect of a specific service, system or process is justified. Therefore, where the provision of data is within the scope of Openreach's obligation to provide ancillary services, we expect such data provided to PIA users to be equivalent to the data Openreach uses itself, unless Openreach can provide a justification for not doing so.

<sup>224</sup> Openreach, June 2020, [PIA Product Description](#), section 15, and Openreach response dated 24 February 2021 to s.135 notice dated 10 February 2021. In response to this s.135 notice, Openreach said it provides both pre and post December 2017 wayleaves agreement information in response to specific queries using its archive search function. Wayleaves from 2015 onwards, along with any associated maps are stored as PDFs on the Openreach Workflow Management Tool.

<sup>225</sup> Joint submission from CityFibre, Glide, Hyperoptic, Nextgenaccess, Telefonica, Virgin Media and Vodafone, paragraphs 46-48; CityFibre, paragraph 5.38 and Table 5.2; Three, paragraphs 17.9-17.13; and PAG, paragraph 6.9, in their responses to the January 2020 Consultation.

the objectives of the PIA remedy.<sup>226</sup> While it is true that PIA users can seek to negotiate with a landlord or apply to a court for wayleaves relating to any relevant sites, it is more efficient and cost effective to rely on rights already extended under the Code, where possible.

- 4.54 We are monitoring developments in relation to wayleave information to understand how such information is used by Openreach and what, if any, barriers exist in relation to altnets' use of PIA.

## **Conclusion: network access obligations in relation to PIA**

- 4.55 For the reasons set out above, we have decided that our PIA requirement (which includes network adjustments and other ancillary services) is proportionate.
- 4.56 In order to implement these measures, we have decided to set SMP Conditions 1 and 2 published in Volume 7. As set out in Section 3, Section 87(3) of the Act authorises Ofcom to impose network access requirements and we have taken into account the factors set out in section 87(4)<sup>227</sup>.

## **Specific requirements for the publication of a Reference Offer (RO)**

### **Our proposals**

- 4.57 We proposed to maintain the specific requirements for the publication of a Reference Offer in relation to PIA imposed in the 2019 PIMR. As part of our proposed general remedies, we also proposed that Openreach is required to publish an Internal Reference Offer (IRO) detailing any differences, including in regard to processes and IT systems, between Openreach's own use of its physical infrastructure for the deployment and operation of full-fibre networks, compared to the equivalent processes and systems for PIA.
- 4.58 As set out in Section 3, requirements for publication of a RO are particularly important in establishing transparency. Our proposals sought to equip both alternative network operators, who deploy fibre networks in order to compete with Openreach, and PIA users with information about the provision of PIA as a basis for supplying downstream services. This obligation is also important for establishing a legal framework for Openreach's customers to agree appropriate Service Level Commitments and Service Level Guarantees (SLAs and SLGs) in support of the provision and use of PIA.

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<sup>226</sup> Joint submission from CityFibre, Glide, Hyperoptic, Nextgenaccess, Telefonica, Virgin Media and Vodafone, paragraphs 46-48; CityFibre, paragraph 5.38 and Table 5.2, in their responses to the January 2020 Consultation; Virgin Media response to the November 2020 Consultation, Annex 1, page 15.

<sup>227</sup> Our commentary on the section 87(4) factors set out in Section 3 also applies, where relevant, to the specific network access remedies.

## Stakeholder responses

- 4.59 Cumbria County Council, INCA, and Openreach agreed with our proposal.<sup>228</sup>
- 4.60 euNetworks and Three raised concerns in relation to Openreach imposing a five-year contract period on PIA services, albeit with some protection for services to continue until such time that the regulatory obligation is removed. euNetworks stated that its customers look for contract periods for 10 or 20 years, looking for security of supply, and noted that BT and Openreach are not subject to such contract term limitations. Three indicated that Openreach had previously offered a 10-year option but had now withdrawn this. Three said they look for contractual certainty.<sup>229</sup>
- 4.61 Other respondents did not raise issues with the proposed requirement on Openreach to publish a PIA RO. However, a number of respondents indicated slow progress on PIA product developments. They suggested the minimum requirements for PIA RO are not sufficient to support the industry negotiations on its detail which renders the PIA remedy ineffective. They set out a number of additional specific requirements for the PIA RO. We discuss these in the “PIA implementation” subsection below.

## Our reasoning and decisions

- 4.62 A requirement to publish a Reference Offer (and an Internal Reference Offer, where there is non-equivalence between the processes and systems used for BT and those used for PIA users) has two main purposes:
- to assist transparency for the monitoring of potential anti-competitive behaviour; and
  - to give visibility to the terms and conditions on which telecoms providers will purchase wholesale services.
- 4.63 We believe that these purposes apply to PIA and have decided that a specific PIA RO is required in the physical infrastructure market. We consider that this proposed requirement is appropriate and proportionate in relation to BT’s market power in the physical infrastructure market.
- 4.64 We have decided that the PIA RO must set out (as a minimum):
- conditions for telecoms providers to gain access to physical infrastructure including if appropriate training, certification and authorisation requirements for personnel to access and work in/on physical infrastructure.
  - conditions for the provision of forecasts by telecoms providers in respect of their future requirements for PIA.<sup>230</sup>

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<sup>228</sup> Cumbria County Council, answer to Volume 3, Question 4.1; INCA, paragraph 157; and Openreach, paragraph 6.123, in their responses to the January 2020 Consultation.

<sup>229</sup> euNetworks, paragraphs 40-42; Three, paragraphs 17.24-17.27; in their responses to the January 2020 consultation.

<sup>230</sup> We are requiring the PIA reference offer to include conditions for the provision of forecasts by telecoms providers in respect of their future requirements for PIA. We continue to consider that in principle, a requirement for telecoms providers to submit forecasts of their PIA usage will be important in assisting Openreach to plan its resources to respond to

- the location of Physical Infrastructure or the method by which telecoms providers may obtain information about the location of physical infrastructure.
- procedures for the provision of information to telecoms providers about spare capacity, including arrangements for visual surveys of physical infrastructure to determine spare capacity.
- conditions for the inspection of the physical infrastructure at which access is available or at which access has been refused on grounds of lack of capacity.
- conditions for reserving capacity.
- the methodology for calculating availability of spare capacity in physical infrastructure.
- arrangements for relieving congested physical infrastructure, including the repair of existing faulty infrastructure and the construction of new physical infrastructure.
- the information that a telecoms provider is required to provide to BT where that telecoms provider is requesting the repair of existing faulty infrastructure and/or the construction of new physical infrastructure necessary for SLAs and SLGs.
- conditions on which telecoms providers may elect to undertake repair or build works on behalf of BT.
- conditions for the installation and recovery of cables and associated equipment.
- technical specifications for PIA<sup>231</sup>, including:
  - technical specifications for permitted cables and associated equipment;
  - cable installation, attachment and recovery methods;
  - technical specifications relevant to the repair of existing faulty physical infrastructure; and,
  - technical specifications relevant to undertaking build works.
- the arrangements for maintenance of cables and associated equipment installed by telecoms providers and of the physical infrastructure, including the provision for the temporary occupation of additional infrastructure capacity for the installation of replacement cables.
- Service Level Commitments and Service Level Guarantees in relation to the timescales for BT to respond to a request by a telecoms provider for PIA including where relevant to relieve congested physical infrastructure other than a congested pole, where such a response confirms that the order has been accepted and includes how BT proposes to relieve that congestion.

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requests for adjustments to its network and meet its SLA targets where this PIA usage requires use of Openreach's resources. However, previously we have said that we considered PIA to be a relatively immature product and therefore it was appropriate to contractually link forecasting and compensation arrangements (Wholesale Local Access Market Review: Statement – Volume 3 para 6.35 ). We now observe that some telecoms providers' use of PIA has greatly increased and matured, although volumes are still volatile. As these volumes stabilise and become more predictable, we would expect the link between forecasting and compensation arrangements to be removed. The purpose of providing forecasts is to assist Openreach to plan its resources. In the situation where a telecoms provider is not extensively relying on Openreach's engineer resource to make adjustments to infrastructure but is mostly making adjustments themselves (called self-provision), their use of PIA will likely have a minimal impact on Openreach's resource plan. Therefore, we would expect that the required level of forecasting detail should be lower, or potentially not required at all.

<sup>231</sup> These measures establish appropriate engineering rules for all PIA users, to be agreed by Openreach and PIA users in line with the NUD obligations set out in SMP Condition 4.

- Service Level Commitments and Service Level Guarantees in relation to the timescales for completion by BT of any works necessary to relieve congested physical infrastructure (including the repair of existing faulty infrastructure and the construction of new physical infrastructure) other than a congested pole.
- Service Level Commitments and Service Level Guarantees in relation to the timescales for BT to respond to a request by a telecoms provider to undertake works itself to relieve congested physical infrastructure.
- Service Level Commitments and Service Level Guarantees in relation to the timescales for BT to respond to a request by a telecoms provider to relieve a congested pole where such a response confirms that the order has been accepted and how BT proposes to relieve that congestion.
- Service Level Commitments and Service Level Guarantees in relation to the timescales for completion by BT of any works necessary to relieve a congested pole.

4.65 We consider that these requirements comprise the minimum information necessary to achieve the purposes set out above in relation to PIA. While we have decided to retain the minimum requirements as proposed in our consultation, we respond to stakeholder feedback on PIA implementation below, setting out our expectations for Openreach to meet these requirements to support the effective provision of PIA.

4.66 We expect Openreach to make sure contract terms reflect the network access obligations. Nothing in our regulations prevents Openreach from offering contract lengths longer than five years, and it must make sure contractual arrangements with PIA users comply with our NUD obligations set out in Section 3.

## Conclusions

4.67 To give effect to the above proposals, we have decided to set the SMP Condition 7 in Volume 7, Legal Instruments. As set out in Section 3, sections 87(6)(c) to (e) authorise the setting of SMP services conditions in relation to the Reference Offer.

## PIA implementation

### Our approach to PIA implementation

4.68 Our ducts and poles access regulation, as set out in the WLA 2018<sup>232</sup> and PIMR 2019<sup>233</sup> statements, has been implemented by Openreach in consultation with industry, primarily through industry collaboration within the PIA Product and Commercial Group (PCG). Our expectations in relation to PIA implementation are based on the competition concerns that the PIA remedy seeks to address. In other words, PIA must be implemented in such a way that it can meet the needs of telecoms providers using it to roll out new gigabit-capable networks at scale.

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<sup>232</sup> Ofcom, March 2018, [WLA 2018 Statement \(Volume 3\)](#), [accessed 11 March 2021].

<sup>233</sup> Ofcom, June 2019, [PIMR 2019 Statement](#), [accessed 11 March 2021].

- 4.69 Implementation work commenced following the publication of the WLA 2018 Statement, in March 2018, and continued through the launch of the enhanced PIA product in April 2019 for a further twelve month ‘bedding-in’ period, concluding in April 2020. While PIA was by that time a fully commercially available product that was attracting significant interest, further enhancements and refinements were still required to optimise PIA for large-scale, fast-paced network deployments by multiple providers, as reflected in stakeholder responses to the January 2020 Consultation.
- 4.70 In autumn 2020, the industry identified five areas of work (the five initiatives) intended to help meet its objective to ‘industrialise’ PIA.<sup>234</sup> These were formally agreed at the September 2020 CEOs duct and pole industry roundtable meeting. At the time of writing, work is underway to implement the five initiatives, which are:
- Data integrity and information sharing.
  - Network adjustments, and their related processes.
  - IT systems, to support the PIA interface between Openreach and PIA users.
  - Processes, to support efficient and effective PIA usage.
  - Equivalence, addressing concerns with transparency and compliance with NUD obligations.
- 4.71 Respondents to our January 2020 Consultation raised a number of concerns around PIA implementation. In the remainder of this section, we set out, and respond to, the main areas that stakeholders commented on. Stakeholders made a number of other detailed comments that we do not address below. However, we remain aware of these concerns.
- 4.72 Following publication of this statement, we will continue to maintain an ongoing monitoring programme to ensure Openreach complies with its obligations. As part of this we will be working with the Office of the Telecoms Adjudicator (OTA2) and PIA users, in order to evaluate their experience of the PIA product. We will also make use of our information gathering powers where appropriate in order to evaluate PIA processes, products or systems that may not be equivalent (with no justification for any difference). Furthermore, we will take forward investigations appropriately, following complaints from other telecoms providers.

## Stakeholder comments

- 4.73 Some stakeholders made submissions about positive developments of the current regulated PIA product.<sup>235</sup> However, most stakeholders suggested the PIA product (as currently implemented) would not be effective in addressing BT’s SMP.<sup>236</sup>

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<sup>234</sup> Minutes of 7<sup>th</sup> CEO’s meeting on PIA implementation, 29 September 2020.

<sup>235</sup> TalkTalk, paragraph 8.34; and Virgin Media, paragraph 40, in their responses to the January 2020 Consultation.

<sup>236</sup> Joint submission from CityFibre, Glide, Hyperoptic, Nextgenaccess, Telefonica, Virgin Media and Vodafone, paragraphs 5-8; TalkTalk, paragraph 8.34-8.37; Telefonica, paragraphs 3.10-3.14 and Figure 5; Virgin Media, paragraphs 39-42; and Vodafone (Part 2), paragraphs 5.46-5.47, in their responses to the January 2020 Consultation.

- 4.74 As explained by CityFibre<sup>237</sup> and Hyperoptic<sup>238</sup> in their responses, given the complexities of PIA product development, telecoms providers who engaged with Openreach through the implementation process recognised the initial RO published by Openreach may require further negotiations and refinements.<sup>239</sup> They outlined industry expectations relating to a mid-term review of the RO, led by Openreach. They stated further work is needed and the regulations do not incentivise Openreach to make progress. Hyperoptic’s response indicated that by July 2020 the only review undertaken by Openreach related to forecasting, and did not lead to any proposed change to the forecasting process within the RO.

### PIA systems and processes

- 4.75 Openreach submitted that any PIA remedy needs to incentivise PIA customers to “control their own civils/skilled engineering burden they place on Openreach”. It encouraged more PIA customers to do their own civils work, including management of local factors such as geography, wayleaves, street works regulations, and adverse weather. Openreach stated it was willing to work with PIA users and Ofcom to improve performance within PIA systems and processes.<sup>240</sup>
- 4.76 CityFibre highlighted a range of administrative costs had been built into PIA systems and processes. These were triggered by different interfaces between Openreach and PIA users through the ordering process,<sup>241</sup> and arising from forecasting requirements at various stages.<sup>242</sup> CityFibre called for Ofcom to intervene in order that these inefficiencies are addressed and Openreach provides a properly functioning PIA product, which would help to speed up network deployment and cut costs.<sup>243</sup>
- 4.77 Axione said that current PIA processes do not support large scale consumption and said Openreach should adopt systems that can support scale deployment in the future.<sup>244</sup>
- 4.78 Towerhouse (on behalf of PIA users), CityFibre, and Hyperoptic raised concerns about the use of manual processes and inefficiencies with the systems available for requesting

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<sup>237</sup> CityFibre response to the January 2020 Consultation, Table 5.2.

<sup>238</sup> Hyperoptic response to the January 2020 Consultation, page 13.

<sup>239</sup> Our regulations required the PIA Reference Offer to be published in draft form within 4 months of the SMP Conditions taking effect, with a Final Reference Offer published within 12 months of the SMP Conditions taking effect. See Ofcom, March 2018, WLA 2018 Statement (Volume 3), paragraph 7.15.

<sup>240</sup> Openreach response to the January 2020 Consultation, paragraph 6.143-6.145.

<sup>241</sup> CityFibre response to the January 2020 Consultation, Table 5.2.

<sup>242</sup> CityFibre response to the January 2020 Consultation, Table 5.2. See also Hyperoptic, page 12-13; Three, paragraphs 17.20-17.21 (indicates challenges meeting forecasting expectations and non-equivalence between PIA and Openreach’s own forecasting processes); and Virgin Media, paragraph 55 (indicates significant information flow from PIA users to Openreach with limited value and suggests efforts to improve the process underpinning information exchange is a distraction from PIA product improvements); in their responses to the January 2020 Consultation.

<sup>243</sup> CityFibre, response to the January 2020 Consultation, paragraphs 5.52-5.54, and 5.74. See also Cumbria County Council, answer to Volume 3, Question 4.1, which requests that Ofcom ensure the requirements for personnel to work on physical infrastructure are not so onerous that community networks are unable to reasonably make use of access, in their response to the January 2020 Consultation.

<sup>244</sup> Axione, response to the January 2020 Consultation, paragraphs 6.35-6.39

access. They said there was an urgent need for Openreach to develop APIs, to remove current inefficiencies affecting network build reliant on PIA.<sup>245</sup>

4.79 CityFibre called for a systems KPI given the importance of effective PIA systems for fibre deployment strategies when relying on PIA to compete with Openreach and downstream BT.<sup>246</sup>

4.80 Virgin Media raised concerns that information in PIA mapping tools was incomplete based on Openreach assessing some infrastructure as ‘planned’ when it was already built. It said this led to information asymmetry with potential to put Openreach at a significant advantage when planning and implementing fibre deployment strategies. Virgin Media proposed Openreach should be required to show planned infrastructure in any relevant PIA tools provided to PIA users, and that we should require Openreach to clean up the relevant information to make clear what is built and what is planned infrastructure. It said progress should be visible to Ofcom and industry.<sup>247</sup>

4.81 The Scottish Government said it is crucial that the PIA product works effectively and has due regard for the unique challenges faced in Scotland to underpin and enable large scale commercial deployment. It said it had received representations from operators highlighting challenges of utilising this product in Scotland, specifically in relation to the location of relevant infrastructure and associated wayleave restrictions.<sup>248</sup>

4.82 The Advisory Committee for Scotland also encouraged Ofcom to take into account the particular deployment challenges in Scotland and, in particular, the use of PIA with associated wayleaves.<sup>249</sup>

#### *Network adjustments and capacity*

4.83 Towerhouse (on behalf of PIA users) reported concerns with the network adjustments systems and process and Openreach’s approach to resolving issues raised by altnets.<sup>250</sup> CityFibre<sup>251</sup>, Hyperoptic<sup>252</sup>, INCA<sup>253</sup> and Telefonica<sup>254</sup> raised similar concerns and indicated the time and costs associated with identifying capacity issues and reporting them to Openreach were a barrier to using PIA and reduced the impact of the network access remedy.

4.84 Towerhouse and CityFibre proposed a regional solution for managing network adjustments on poles and citywide fibre roll outs, coordinating activities separate from any specific orders that follow. They argued this would allow Openreach to target resources for

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<sup>245</sup> Joint submission from CityFibre, Glide, Hyperoptic, Nextgenaccess, Telefonica, Virgin Media and Vodafone, paragraphs 21-29; CityFibre, Table 5.2; Hyperoptic, page 10; in their responses to the January 2020 Consultation.

<sup>246</sup> CityFibre response to the January 2020 Consultation, Table 5.2.

<sup>247</sup> Virgin Media response to the January 2020 Consultation, paragraphs 43-52.

<sup>248</sup> Scottish Government response to the January 2020 Consultation, page 3.

<sup>249</sup> [Advisory Committee for Scotland](#) response to the January 2020 Consultation, page 2.

<sup>250</sup> Joint submission from CityFibre, Glide, Hyperoptic, Nextgenaccess, Telefonica, Virgin Media and Vodafone, response to the January 2020 Consultation, paragraphs 33-45.

<sup>251</sup> CityFibre response to the January 2020 Consultation, paragraph 5.63 and Table 5.2.

<sup>252</sup> Hyperoptic response to the January 2020 Consultation, pages 11-12.

<sup>253</sup> INCA response to the January 2020 Consultation, paragraph 159.

<sup>254</sup> Telefonica response to the January 2020 Consultation, paragraphs 3.16, and 3.24-3.25.

network adjustments and improved capacity in advance of orders being placed, improving forecasts and optimise PIA usage.<sup>255</sup>

- 4.85 CityFibre highlighted both Openreach and telecoms providers face an administrative burden when undertaking independent field surveys to inspect relevant infrastructure in order to decide how to proceed and on what basis. It indicated some information, such as Customer Confirmed Date, was not available early in the process to support these assessments. CityFibre asked Ofcom to consider imposing an obligation on Openreach to allow operators to reserve capacity within infrastructure ahead of deployment. It submitted this would assist with network planning and fibre deployment where duct and pole capacity is a scarce resource.<sup>256</sup>
- 4.86 Three raised concerns at Openreach's ability to understand asset availability and plan fibre deployment accordingly. It called for Openreach to act quickly in response to Notices of Intent<sup>257</sup>, inspecting relevant infrastructure and starting network adjustments in advance of providers rolling out fibre in the area.<sup>258</sup>
- 4.87 Hyperoptic said that the industry (through the PIA Product and Commercial Group) had developed a process for autonomous network adjustments, but that Openreach had rejected their proposals. It said Openreach had subsequently proposed its own system for certain users. Telefonica and Hyperoptic proposed that Ofcom intervene and establish through the PIA remedy a prescribed process to enable providers to address network blockages themselves before claiming back the cost.<sup>259</sup>

### SLAs and SLGs

- 4.88 CityFibre and Towerhouse stated their frustration at the time taken for Openreach to develop functioning system SLAs/SLGs.<sup>260</sup>
- 4.89 Axione, BUUK, Hyperoptic and euNetworks stated their concern for the limited scope of SLAs and SLGs, linking this to significant delays in Openreach's provision of certain services.<sup>261</sup> euNetworks suggested that a more nuanced SLA system that allows Openreach customers to report multiple problems separately, or separate SLAs for different PIA products would go some way to redress this.<sup>262</sup>

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<sup>255</sup> CityFibre, Table 5.2; Joint submission from CityFibre, Glide, Hyperoptic, Nextgenaccess, Telefonica, Virgin Media and Vodafone, paragraphs 42-44; in their responses to the January 2020 Consultation.

<sup>256</sup> CityFibre response to the January 2020 Consultation, Table 5.2 and paragraphs 5.75-5.76.

<sup>257</sup> Notice of Intents form part of the ordering process where a PIA users indicates parts of the Openreach physical infrastructure network it intends to access. It does not constitute formal reservation of a section of duct space or a pole.

<sup>258</sup> Three response to the January 2020 Consultation, paragraphs 17.14-17.16.

<sup>259</sup> Hyperoptic, pages 11-12; Telefonica, paragraph 3.25; in their responses to the January 2020 Consultation.

<sup>260</sup> CityFibre, paragraph 5.38; Joint submission from CityFibre, Glide, Hyperoptic, Nextgenaccess, Telefonica, Virgin Media and Vodafone, paragraph 49-50; in their responses to the January 2020 Consultation.

<sup>261</sup> Axione, paragraphs 6.28-6.29; BUUK, answer to Volume 3, Question 7.1; Hyperoptic, pages 13-14; euNetworks, paragraphs 46-56 in their responses to the January 2020 Consultation.

<sup>262</sup> euNetworks response to the January 2020 Consultation, paragraph 51.

- 4.90 PAG, TalkTalk and Telefonica suggested that functioning SLAs and SLGs would increase the incentive for Openreach to improve its PIA product offering. Telefonica called on Ofcom to impose an IT systems SLA/SLG on Openreach.<sup>263</sup>
- 4.91 Axione and Hyperoptic questioned the impact of SLGs as an incentive on Openreach given they do not reflect costs incurred by altnets.<sup>264</sup> Hyperoptic indicated there was a lack of reciprocity in the process of providing evidence to prove that network adjustments work had been completed. This led to increased resources and time spent to ensure SLGs were paid as required in instances where Openreach failed to meet SLAs. This delays remedial payments and increases costs for PIA users.<sup>265</sup>

### Internal Reference Offer

- 4.92 Axione, euNetworks, INCA, and [redacted] [a confidential respondent] submitted the current IRO was of limited usefulness.<sup>266</sup> INCA said it provided insufficient clarity on the differences between internal and external consumption of PIA.
- 4.93 Openreach stated it was open to refining and adding to the IRO, and supported the introduction of such a document. Openreach argued that development of the IRO was not a straightforward exercise due to internal complexities within Openreach which make comparisons difficult. It indicated it will look to document comparisons with Ethernet services where applicable rather than describe the non-equivalence found within internal systems and processes.<sup>267</sup>

### Our reasoning and decisions

- 4.94 PIA is a collection of systems and processes to facilitate access to BT's physical infrastructure, with telecoms providers using such physical infrastructure in a variety of ways once access is achieved. PIA implementation is an ongoing activity and product developments are likely to be introduced across the five-year review period.
- 4.95 We set out our response to stakeholder comments below.

### PIA systems and processes

- 4.96 Our objective is to promote investment in gigabit-capable networks by Openreach and other telecoms providers in order to promote network-based competition. PIA is a key part of achieving this objective. Therefore, PIA systems and processes must be efficient and capable of meeting demand for large-scale fibre deployment. An effective PIA product is

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<sup>263</sup> PAG, paragraph 6.15.2; TalkTalk, paragraph 8.35; Telefonica, paragraph 3.21; in their responses to the January 2020 Consultation.

<sup>264</sup> Axione, paragraph 6.30; Hyperoptic, page 14 in their responses to the January 2020 Consultation.

<sup>265</sup> Hyperoptic response to the January 2020 Consultation, page 14.

<sup>266</sup> Axione, paragraph 6.20-6.21; euNetworks, paragraphs 77-78; INCA, paragraph 165; and, [redacted] [a confidential respondent], page 4; in their responses to the January 2020 Consultation.

<sup>267</sup> Openreach, response to the January 2020 Consultation, paragraphs 6.113 and 6.117-6.122.

needed to address our competition concerns both in relation to the physical infrastructure market and downstream markets.

- 4.97 As we explain above, work by the industry to fully implement PIA is ongoing at the time of this statement. Progress has been made on the implementation of PIA since 2019, as acknowledged in June 2020 by Openreach and some of its customers<sup>268</sup>, and further work has been undertaken since industry members responded to our consultation around a year ago. In particular, the industry has continued to work together to address a number of the concerns raised by stakeholders.
- 4.98 In relation to IT systems (for example for forecasting, ordering and surveys), a number of product developments have been made available through software updates during 2020 and these are expected to continue throughout 2021. Progress is reported against the PIA CP roadmap at the monthly PIA Product and Commercial Group (PCG).<sup>269</sup>
- 4.99 When establishing systems that place administrative costs and burdens on PIA users, we expect Openreach to provide assistance to PIA users to ensure they understand what is expected of them and can meet those expectations, for example providing forecasts.
- 4.100 Furthermore, for PIA to be effective in addressing the competition concerns we have identified, the IT systems should where possible provide an integrated solution between PIA users and Openreach to facilitate process automation and help ensure that PIA can be used at scale, in a cost-effective and predictable manner. As progress continues with development of API tools for PIA, we expect Openreach to work with telecoms providers as these systems are launched, recognising PIA users need to contribute requirements and feedback in a timely manner to assist with implementation.
- 4.101 As set out in Section 3, in relation to our NUD obligations, we would expect that, unless otherwise justified, the processes associated with the raising, validation, execution and auditing of PIA network adjustments offer telecoms providers the same degree of discretion, timeliness and flexibility as Openreach's direct labour force or their third-party contract partners have in addressing physical infrastructure remedial works for their full-fibre deployment programmes. This can be achieved either by allowing the telecoms provider to undertake the works themselves or by requesting that Openreach carry out the works on their behalf.
- 4.102 We also expect that PIA processes supporting customer connections<sup>270</sup> should take account of the requirements on retail telecoms providers regarding provisioning and migration dates.<sup>271</sup>

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<sup>268</sup> TalkTalk, paragraph 8.34; and Virgin Media, paragraph 40, in their responses to the January 2020 Consultation.

<sup>269</sup> Minutes of 7<sup>th</sup> CEO's meeting on PIA implementation, 29 September 2020.

<sup>270</sup> Establishing a final connection between a customer's premises and the access network deployed by the telecoms provider, which involves the use of lead-ins (overhead or otherwise).

<sup>271</sup> Our [October 2020 switching statement](#), paragraphs 9.144 - 9.146, makes clear our expectation that, in most cases, providers should be able to include an exact date for the start of the service (or the migration date for switching customers) in the customer's contract information by December 2022. If providers are unable to include an exact date, there should be objective technical or practical reasons for this, and rather than an exact date they should instead set out,

- 4.103 In relation to CityFibre’s request for a system to reserve capacity in BT’s network as part of PIA<sup>272</sup>, we acknowledge access to infrastructure capacity currently operates on a ‘first come, first served’ basis for all telecoms providers, including Openreach. In line with our minimum requirements for the PIA RO, we maintain our view that processes for raising Notices of Intent (NoIs), which inform Openreach which parts of Openreach’s physical infrastructure the telecoms provider intends to use, should be no more burdensome than the equivalent processes Openreach follows itself unless a difference can be justified, and that IT systems should fully support the convergence of such processes.<sup>273</sup>

### SLAs and SLGs

- 4.104 The requirement to publish a Reference Offer assists in establishing a legal framework for Openreach’s customers to agree appropriate SLAs and SLGs in support of the provision and use of PIA. If appropriate SLAs and SLGs are not agreed, the underlying provision of network access risks becoming ineffective and the network access remedy fails to address BT’s SMP in the physical infrastructure market. This would lead to consumer benefits not materialising in the downstream markets supported by anticipated fibre deployment from competing providers seeking to rely on PIA.
- 4.105 We do not consider it generally appropriate to impose prescriptive SLAs and SLGs on Openreach and its customers through regulation. However, we will consider any new information that is gathered during the review of the IRO (and, by extension, the published PIA Reference Offer) and we retain the power to issue directions to establish a framework for effective negotiations. Furthermore, we consider there is clarity in the scope offered to industry when agreeing and updating the range of SLAs and SLGs that are relevant for the provision of PIA based on the minimum scope set out above at paragraph 4.64.
- 4.106 For example, under the PIMR 2019 SMP Conditions 7.3(l) and (m), PIA users have sought to define and implement appropriate SLAs & SLGs for the management and updating of PIA-related data, in particular that relating to the first of the priority initiatives of ‘data integrity and information-sharing’, which centres on data relating to the nature, location, capacity and serviceable condition of the physical infrastructure within scope of PIA.<sup>274</sup> When considering such requests, we expect Openreach to explore what SLAs and SLGs are reasonably necessary in accordance with the RO requirements.

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as accurately as possible, the latest date by which they undertake to deliver the customer’s service. In these circumstances, we would expect customers to be subsequently informed, prior to the provision of their services, of the exact date or migration date on which their service will be provided. When providing information about the migration date, providers also need to comply with the requirements of GC C7.3, including ensuring that this date is, where technically possible, one requested by the customer or, where not the date requested by the customer, it is as soon as possible.

<sup>272</sup> CityFibre response to the January 2020 Consultation, paragraph 5.75-5.76.

<sup>273</sup> A NoI does not confer any formal space reservation rights. Rather they denote potential future occupancy of infrastructure by the telecoms provider.

<sup>274</sup> Minutes of 7<sup>th</sup> CEO’s meeting on PIA implementation, 29 September 2020.

### Internal reference offer

- 4.107 As set out in Section 3, we have imposed a requirement on Openreach to publish an IRO to allow Ofcom and stakeholders to identify any differences in the processes for internal use of network access compared to such use by third parties.
- 4.108 The IRO should set out the services to facilitate access to BT's physical infrastructure that Openreach uses in a different manner to its customers, giving visibility to any justification for non-equivalence, as well as highlighting where processes, rules or systems (or similar) are the same. For example, where engineering rules are equivalent, this should be transparent. This will help to ensure that PIA users can have confidence that they are not at a disadvantage, particularly in terms of extra cost, time or uncertainty, where Openreach follows different processes.
- 4.109 We note the challenges involved in making direct comparisons, as raised by Openreach<sup>275</sup>, and we acknowledge that Openreach's own FTTP deployment programme processes and systems may in many cases be the most useful benchmark when considering process alignment and visibility of the systems and processes used by contractors accessing Openreach's physical infrastructure on its behalf.<sup>276</sup> However, we would expect Openreach to consider their obligations in respect of all use of duct when preparing the Internal Reference Offer allowing these differences in processes, systems or rules to be identified. Likewise, if processes, rules or systems vary by region these should also be considered.
- 4.110 As discussed in Section 3, we expect new or upgraded services, systems and processes to be built in a way that supports EOI. Where Openreach introduces new or upgraded services, systems and process on a non-equivalent basis, it must update the published IRO accordingly, giving industry and Ofcom visibility of such developments. Equally, where system developments remove, or reduce, non-equivalence between internal operations at Openreach and PIA, that would require an update to the published IRO.

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<sup>275</sup> Openreach response to the January 2020 consultation, paragraphs 6.119-6.122.

<sup>276</sup> For example, this would include benchmarking versus Openreach's retro-new site programme (RNS) as well as Openreach's Fibre Cities programme.

## 5. Specific remedies: WLA, LL Access and IEC markets

- 5.1 In this section we set out our decisions to impose certain specific remedies in the markets downstream of the physical infrastructure market where we have found BT to have SMP. These are the markets for WLA in Area 2 and Area 3, LL Access in Area 2, Area 3 and the HNR Area, and IEC from BT Only and BT+1 exchanges. These remedies are designed to address the competition concerns we have identified in our SMP market assessment (Volume 2) and are in line with our approach to remedies (Section 1).
- 5.2 The specific remedies require Openreach to provide network access to services in the relevant WLA, LL Access and IEC markets, and any necessary ancillary services. These remedies are broadly in line with those imposed in the 2018 WLA and 2019 BCMR.

**Table 5.1: Summary of specific access remedies**

Market	Specific access remedy
WLA	Metallic Path Facility (MPF)
	Sub-loop Unbundling (SLU)
	Virtual Unbundled Local Access (VULA) at 40/10
	VULA at all bandwidths
LL Access	Ethernet and Wavelength division multiplex (WDM) at all bandwidths
IEC	Ethernet and WDM at all bandwidths

- 5.3 For some of these network access remedies, we require Openreach to include certain supporting information in its Reference Offer (RO).
- 5.4 For each requirement, we summarise our consultation proposals and stakeholders' responses, and explain our decision in terms of the form of remedy which we impose in each market and the extent to which that remedy applies. In relation to the WLA markets, we set out how we apply the specific remedies in view of our approach to copper retirement and the required minimum contract period for VULA services.
- 5.5 In addition to the remedies discussed in this section, we require Openreach to provide access to dark fibre in the LL Access market in Area 3 and the relevant IEC markets, impose certain restrictions on Openreach's commercial flexibility in the WLA and LL Access markets, and impose quality of service remedies in the WLA, LL Access and relevant IEC markets. We discuss these remedies in Section 6, Section 7 and Volume 5 respectively.

## Specific remedies in the WLA markets

### Requirement to provide Local Loop Unbundling (LLU) in the form of MPF

#### Background

- 5.6 LLU is a process by which BT offers access to its copper-based local access network to other telecoms providers. LLU enables other telecoms providers to deploy their own equipment in order to provide retail services (voice and/or standard broadband).
- 5.7 With LLU a telecoms provider can either use the entire local access connection, known as Metallic Path Facility (MPF), or they can share the local access connection, known as Shared Metallic Path Facility (SMPF). This enables a telecoms provider to choose to offer either:
- a retail bundle of voice and standard broadband services, as enabled by MPF; or
  - just a retail standard broadband service, as enabled by SMPF.
- 5.8 Since its introduction in 2000, each of MPF and SMPF have been imposed as a remedy in successive market reviews. In 2018 WLA we deregulated SMPF because we found that the vast majority of non-BT lines are provided using MPF and so the role of SMPF in supporting LLU based entry was no longer important to downstream competition.
- 5.9 Purchasing MPF is sufficient on its own for supplying a lower speed standard broadband service. In order to supply a superfast broadband service, customers who purchase MPF also need to purchase a FTTC or G.fast service.

#### Our proposals

- 5.10 We proposed to retain the obligation on Openreach to provide network access in the form of MPF, including relevant ancillary services. We also proposed that MPF is subject to the following charge controls, as set out in Volume 4:
- Area 2 – charge control with prices indexed in line with inflation (CPI-0%); and
  - Area 3 – cost-based charge control based on a Regulatory Asset Base approach.

#### Stakeholder responses

- 5.11 Stakeholders that commented on our MPF proposal expressed support for retaining the obligation during the next review period.<sup>277</sup>
- 5.12 Where respondents did raise comments about MPF, these related to specific pricing arrangements across Areas 2 and 3, which we consider in Volume 4.
- 5.13 Vodafone argued that given WLR is now used mainly as a copper bearer for delivering broadband services (rather than to deliver voice services) it should remain subject to the same regulation as MPF. Vodafone argued that removing regulation of WLR while

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<sup>277</sup> BUUK, page 7; Gigaclear, paragraph 105; INCA, paragraph 157; KCOM, paragraph 2.2; SSE page 5; TalkTalk, paragraphs 6.93 and 6.94; and [§<] [a confidential respondent], page 6, in their responses to the January 2020 Consultation.

continuing to regulate MPF will likely lead to WLR costs rising faster, harming consumers, and retailers (other than BT) who rely on the product. It said WLR will be needed for some time to ensure a smooth single-stage transition to FTTP (i.e. without using SOGEA), and that adopting SOGEA as an interim solution will be expensive for retailers and inconvenient for retail customers.<sup>278</sup> Vodafone set out its view that where WLR is used as a bearer to deliver broadband, it is in the WLA market.<sup>279</sup>

### Our reasoning and decisions

5.14 For the reasons set out below, we consider that the measures we are imposing are appropriate and proportionate in relation to BT's market power in the WLA markets.

#### Network access to MPF

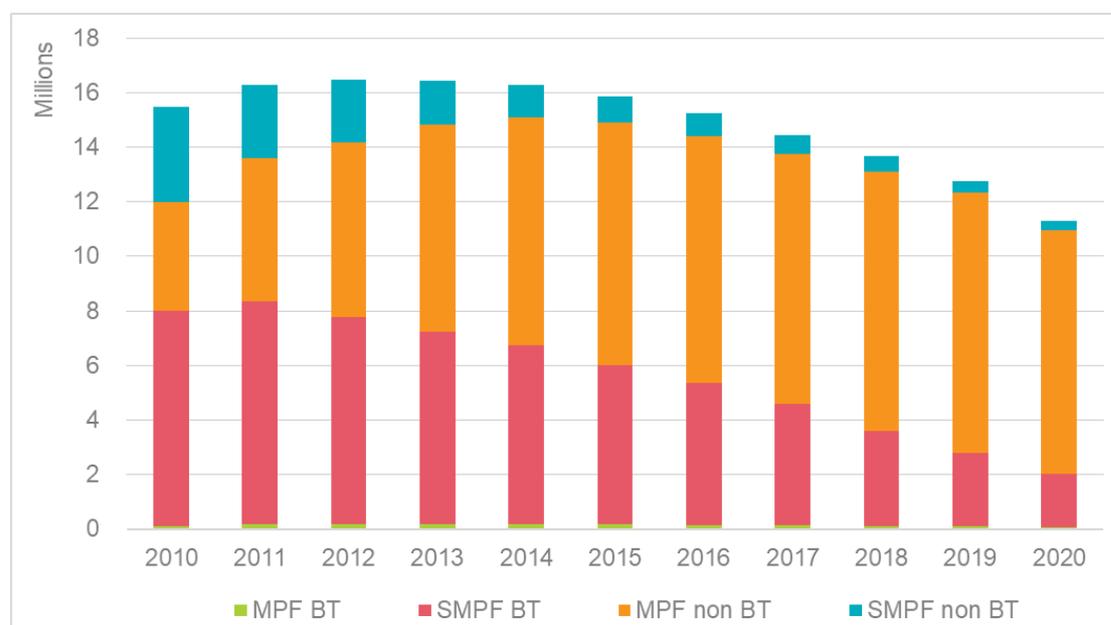
5.15 MPF has played an important role in promoting and sustaining competition in the provision of retail voice and broadband services.

5.16 Currently, around [redacted]m broadband lines are provided by third-party telecoms providers using MPF (including those cases where MPF is used in conjunction with FTTC services), which represents about a third of all UK broadband lines.

5.17 BT does not make significant use of MPF to support its retail customer base. Instead, BT's broadband services are predominantly based on its SMPF or FTTC services, supported by a copper line in the form of wholesale line rental (WLR).

5.18 We have set out the historical volume movements of LLU services in Figure 5.2.

**Figure 5.2: Historical movements of LLU services**



Source: Openreach reports to Ofcom, 299 Ofcom Supplement, December 2009 to December 2020.

<sup>278</sup> [Vodafone \(part 1\)](#), response to the January 2020 Consultation, section 4.

<sup>279</sup> [Letter from \[redacted\] \(Vodafone\) to Lindsey Fussell \(Ofcom\)](#), 5 February 2021.

- 5.19 We expect the ongoing rollout of FTTP infrastructure to incentivise migration away from copper-based services. However, where there is no FTTP, third-party telecoms providers are likely to continue to rely on MPF for the provision of standard broadband services or as a support to superfast broadband using FTTC or G.fast services. This is captured in our volume forecast – we expect the number of external MPF lines to fall to around [X]m in 2025/26 (including those cases where MPF is used in conjunction with FTTC services).
- 5.20 Absent regulation, Openreach would have the ability and incentive to put BT’s competitors at a disadvantage by not offering MPF services, or by doing so only on unfavourable or discriminatory terms and/or quality of service. This would result in consumer harm in the form of service degradation, restricted choice of provider and/or higher prices.
- 5.21 Although the general network access remedy we impose in Section 3 is aimed at addressing these competition concerns, it does not provide telecoms providers with as much certainty as to the basis on which they have access. Given the large number of consumers that are still reliant on MPF, we consider it appropriate and proportionate to go beyond the general network access obligation to address the above concerns and ensure telecoms providers and consumers are sufficiently protected.
- 5.22 Therefore, we have decided to retain the specific access obligation on Openreach in relation to MPF. We are satisfied that the form of specific access obligation on MPF we are imposing is the minimum necessary.
- 5.23 In addition to this specific access service, a number of ancillary services are necessary to enable and support the provision of MPF, including as a minimum space and power, site access, tie cables, and any other supporting services used for installation, maintenance, modification, and ceasing of this specific access service. Our specific access remedy requires Openreach to provide these ancillary services.

*Disapplication of the network access obligation in relation to copper retirement*

- 5.24 In Section 2 we set out how we will support the copper retirement process, i.e. the transition from copper-based services to fibre-based services. In particular, we introduce a phased removal of the regulation of copper-based services.
- 5.25 To implement our approach to copper retirement, in Section 3 we have decided to limit the general network access obligation on BT’s copper network. In effect, this will also disapply the specific requirement to meet new requests for MPF network access in exchange areas where ultrafast broadband is available to 75% of premises, for the premises where FTTP is available. This means that, if the relevant requirements are met, and subject to its contractual obligations with the telecoms provider, Openreach would be able to refuse the provision of a new MPF service (this allows the “stop sell” of copper services – see Section 2).

### *Reference Offer*

- 5.26 We have decided to retain, for the purposes of transparency, the existing specific Reference Offer (RO) requirements for MPF services. These require Openreach to, among other things, include in the MPF RO details of accommodation arrangements<sup>280</sup> (e.g. the provision of space and power), Service Level Agreements (SLAs) and Service Level Guarantees (SLGs).
- 5.27 We have decided to require Openreach to pay SLGs proactively. Openreach should make an SLG payment for each day that it contractually fails to provide or repair an MPF service. These payments should continue until the situation is resolved, i.e. without a limit on the duration of the delay. These measures will address our concern that Openreach has the ability and incentive to focus on new MPF installation or repair requests at the expense of those cases that are already late. We consider that the customer detriment associated with delayed repairs and installations is particularly pertinent for MPF due to the degree to which consumers still rely upon these for voice and broadband services.

### *Charge controls*

- 5.28 In Section 1 we set out our approach to pricing of wholesale services in the WLA markets. In Volume 4 Sections 1 and 2 we set out in detail our decisions relating to the design of each charge control and our justification for it, including for MPF.

### *Disapplication of the charge controls in relation to copper retirement*

- 5.29 In view of our approach to copper retirement set out in Section 2, we consider that the MPF charge controls should support a progressive transition from legacy copper broadband to FTTP services while protecting consumers and ensuring that, where possible, there are no households left behind.
- 5.30 We have decided to disapply the charge control obligations in relation to MPF, for those premises where FTTP is available, in exchange areas where ultrafast broadband deployment is complete and after a minimum of two years have passed since ultrafast broadband was deployed to 75% of premises. In addition, in these cases the general requirement for fair and reasonable prices will not apply. This means that, if the relevant requirements are met, and subject to its contractual obligations with the telecoms provider, Openreach would be able to increase the wholesale charges for its MPF services.
- 5.31 For the reasons set out in Section 2, we consider that these measures are appropriate and proportionate.

### *WLR*

- 5.32 As explained above, Vodafone has commented that WLR should also be regulated. As explained in Volume 2 Section 9, we have decided to remove all regulation from the WFAEL market, which is the market in which WLR regulation has previously been imposed. We have also considered whether it would be appropriate to impose a remedy in the WLA

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<sup>280</sup> For the purposes of this statement, accommodation services include co-location and co-mingling.

market reflecting WFAEL deregulation. However, we do not consider that this is necessary to address our competition concerns.<sup>281</sup>

- 5.33 Openreach plans to withdraw WLR products and transition to IP voice services by the end of 2025. We acknowledge that telecoms providers currently dependent on WLR are at this stage unlikely to move to MPF as an alternative copper bearer. However, Openreach has made a voluntary commitment to maintain WLR products on fair and reasonable terms until their full withdrawal in 2025.<sup>282</sup> Further, an alternative charge-controlled product exists in the form of SOGEA which is regulated in the WLA market and has been fully available since 1 April 2020 (see below).
- 5.34 With respect to Vodafone's argument that adopting SOGEA as an interim solution would require consumers to migrate twice, we do not believe this will cause material harm to retail competition, or consumers. All telecoms providers, including BT, will need to migrate some customers to SOGEA, as this will be unavoidable in locations where FTTP is not available before WLR is withdrawn in 2025. Retailers have a commercial incentive to make this process as smooth as possible for customers.
- 5.35 Therefore, the remedies we are imposing in the WLA market (alongside Openreach's voluntary commitment) provide sufficient protection to consumers and retail competition during this period of migration.

### *Conclusion*

- 5.36 In order to implement these measures, we have included the requirements outlined above in the SMP Conditions 1, 2 and 7 published at Volume 7. As set out in Section 3, section 87(3) of the Act authorises Ofcom to impose network access requirements and we have taken into account the factors set out in section 87(4)<sup>283</sup>; and sections 87(6)(c) to (e) authorise the setting of SMP services conditions in relation to the RO.

## Requirements to provide VULA

### Background

- 5.37 Virtual Unbundled Local Access (VULA) is a virtual connection over a shared high-speed access network, which could be a FTTC access network, a cable access network or a FTTP access network. We cover these types of access network in more detail in Annex 2. Openreach currently offers a number of services to fulfil its requirement to provide VULA. These include:
- a) **FTTC:** Generic Ethernet Access over Fibre-to-the-Cabinet uses a fibre connection between the serving exchange and the cabinet, and a copper connection between the

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<sup>281</sup> Here we address why it is not necessary to regulate WLR to address our competition concerns in the WLA market. Vodafone also argued that we should define a separate copper bearer market. We address those arguments in Volume 2 Section 9.

<sup>282</sup> We discuss this commitment in more detail in Volume 2 Section 9.

<sup>283</sup> Our commentary on the section 87(4) factors set out in Section 3 also applies, where relevant, to the specific network access remedies.

cabinet and the premise to provide a superfast broadband connection. To deliver the service, it is necessary to purchase both the FTTC access product and the copper bearer (typically MPF or WLR).

- b) **SOGEA:** Single Order Generic Ethernet Access over FTTC is a standalone product variant that allows customers to buy a superfast broadband line without the need to buy the copper bearer separately.
- c) **G.fast:** GEA over Fibre-to-the-Distribution-point uses a fibre connection between the serving exchange and the distribution point, with a copper connection between the distribution point and the premise.<sup>284</sup> It provides higher broadband speeds than FTTC. Over short copper connections, G.fast is capable of delivering ultrafast speeds. As with FTTC, it is necessary to purchase both the G.fast access product and the copper bearer.
- d) **SOG.fast:** Single Order G.fast is a standalone product variant that allows customers to buy a broadband line without the need to buy the copper bearer separately.
- e) **FTTP:** Generic Ethernet Access over Fibre-to-the-Premises uses fibre connections all the way to the customer premises to deliver an ultrafast broadband connection.

### Our proposals

- 5.38 We proposed to retain an obligation on Openreach to provide network access in the form of VULA, including relevant ancillary services. We also proposed an obligation on Openreach to supply a VULA 40/10 service.
- 5.39 We proposed that the VULA services are subject to charge controls prior to copper retirement, as discussed in Volume 4.

### Stakeholder responses

- 5.40 Stakeholders that commented on our VULA proposal expressed support for retaining the obligation during the next review period.<sup>285</sup>
- 5.41 SSE emphasised the need for appropriate SLAs and SLGs on ancillary services. It said ancillary services, such as GEA Cablelink, should validate the existing lead times, such as GEA Cablelink delivery SLAs, to allow telecoms providers with no existing GEA Cablelink infrastructure to compete on service provisioning without having to invest in pre-populating BT exchanges. SSE also identified the need for SLG payments to apply to faults on the underlying ancillary services, such as GEA Cablelink.<sup>286</sup>
- 5.42 Stakeholders made a number of other comments about the pricing of VULA, which we consider in Volume 4.

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<sup>284</sup> Distribution point normally refers to a pole or street cabinet placed close to the customers premises. G.fast may also be placed in the same more centralised street cabinet used for FTTC.

<sup>285</sup> BUUK, page 7; Gigaclear, paragraph 105; INCA, paragraph 157; KCOM, paragraph 2.2; SSE page 5; TalkTalk, paragraphs 6.95-97; and [redacted] [a confidential respondent], page 6; in their responses to the January 2020 Consultation.

<sup>286</sup> SSE response to the January 2020 Consultation, answer to Volume 3, Question 5.1.

## Our reasoning and decisions

5.43 For the reasons set out below, we consider that our measures are appropriate and proportionate in relation to BT's market power in the WLA markets.

### *Network access to VULA*

5.44 Access to VULA services is key for promoting and sustaining competition in the provision of superfast and ultrafast broadband services.

5.45 Competing telecoms providers rely on Openreach's VULA services as end-users adopt superfast broadband in advance of fibre rollout. Currently, around [X]m broadband lines are provided by third-party telecoms providers using Openreach's VULA services (other than FTTP), mostly in the form of FTTC. We expect this trend to continue over the course of this review period and until the migration to FTTP. In particular, we forecast external VULA lines (other than FTTP) to increase to around [X]m in 2025/26.

5.46 During this review period Openreach will be increasing its coverage of full fibre and beginning to retire its copper network. Therefore, FTTP services will become increasingly important to competing telecoms providers throughout this review period.<sup>287</sup>

5.47 Absent regulation, Openreach would have the ability and incentive to put BT's competitors at a disadvantage by not offering VULA services, or by doing so only on unfavourable or discriminatory terms and/or quality of service. This would result in consumer harm in the form of service degradation, restricted choice of provider and/or higher prices.

5.48 Although the general network access remedy we impose in Section 3 is aimed at addressing these competition concerns, it does not provide telecoms providers with as much certainty as to the basis on which they have access. Given the high number of consumers that are reliant on VULA services for the provision of broadband, we consider it appropriate and proportionate to go beyond the general network access obligation to address the above concerns and ensure telecoms providers and consumers are sufficiently protected.

5.49 Therefore, we have decided to impose the specific access obligation on Openreach in relation to VULA. We are satisfied that the form of specific access obligation on VULA we are imposing is the minimum necessary.

5.50 Where Openreach is required to provide MPF and FTTC/G.fast is available, telecoms providers should be able to combine these services for the purposes of VULA. Therefore, we have decided that in such cases, Openreach is required to provide either FTTC or G.fast. This does not prevent Openreach offering SOGEA and SOG.fast.<sup>288</sup>

5.51 We have decided to retain the five high-level characteristics that we consider the VULA service needs to adhere to:

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<sup>287</sup> We discuss our FTTP volume forecasts further in Annex 14.

<sup>288</sup> For avoidance of doubt, where Openreach is required to provide MPF, if a telecoms provider requests FTTC, Openreach would be able to meet that request through offering G.fast, and if a telecoms provider requests G.fast, Openreach would be able to meet that request through offering FTTC.

- **Local access:** interconnection by the VULA user should occur locally, i.e. at the first feasible aggregation point. In practice this is likely to be in the serving exchange where the first Ethernet switch is located (fibre exchange).<sup>289</sup>
- **Service agnostic access:** VULA, like LLU, should be a generic access service. That is, it should provide service agnostic connectivity, replicating one of the key features of LLU. This means the service should not be confined to supporting particular downstream services.
- **Uncontended access:** the connection, or capacity, between the customer's premises and the serving exchange where interconnection takes place should be dedicated to the customer, i.e. the connection should be uncontended.<sup>290</sup>
- **Control of access:** telecoms providers should be given flexibility to allow them to offer differentiated services to customers. In order to provide different types of services, this freedom of control could potentially involve varying quality of service parameters.
- **Control of customer premises equipment (CPE):** like the control of access characteristic described above, competing telecoms providers should have the ability to control customer premises equipment, giving them the ability to differentiate how they deliver services to their customers.

5.52 Considering the limitations of non-physical layer access, these characteristics allow reasonable control and flexibility such as to enable telecoms providers to provide differentiated services in competition with BT over its fibre local access network. Therefore, we have decided that the above VULA characteristics remain appropriate without modifications or additions. As with previous WLA market reviews, we have decided not to include the characteristics in the SMP condition itself.

5.53 In addition to this specific access service, a number of ancillary services are necessary to enable and support the provision of VULA, including as a minimum, space and power, site access, Cablelink, and any other supporting services used for installation, maintenance, modification, and ceasing of this specific access service. Our specific access remedy requires Openreach to provide these ancillary services.

#### *Network access to VULA 40/10*

5.54 As we discuss in Volume 4 Sections 1 and 2, we consider that it is appropriate to regulate Openreach's charge for VULA 40/10 in Area 2 and Area 3. We have decided that where Openreach is required to provide VULA, it must provide a 40/10 variant.<sup>291</sup> As with the

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<sup>289</sup> Note that the serving exchanges used for fibre access (FTTC and FTTP) are not necessarily the same as the local serving exchanges used for copper access. This is because fibre does not have the same distance limitations as copper and therefore a higher number of customers can be connected over a wider geographic area than is possible from a local serving exchange.

<sup>290</sup> An uncontended service is one in which the bandwidth to each user is dedicated. In other words, the bandwidth is not shared with other users.

<sup>291</sup> This means where Openreach is required to provide FTTC, it must provide a 40/10 version, and where Openreach is not required to provide FTTC, it must provide a VULA 40/10 over whatever successor service is available, that is either FTTP, G.fast or SOG.fast.

VULA requirement above, where FTTP 40/10 is not available (and Openreach deployed an appropriate network), Openreach is required to provide either FTTC 40/10 or G.fast 40/10.

*Disapplication of the network access obligation in relation to copper retirement*

- 5.55 To implement our approach to copper retirement, in Section 3 we decided to limit the general network access obligation on BT's copper network. In effect, this will also disapply the specific requirement to meet new requests for network access to VULA (except FTTP) in exchange areas where ultrafast broadband is available to 75% of premises, for the premises where FTTP is available. This means that, if the relevant requirements are met, and subject to its contractual obligations with the telecoms provider, Openreach will be able to refuse the provision of a new FTTC and G.fast service, including Single Order variants (this allows the "stop sell" of copper services – see Section 2).

*Reference Offer*

- 5.56 We have decided to retain, for the purposes of transparency, the existing specific Reference Offer requirements for VULA services. These require Openreach to, among other things, include in the VULA RO details of accommodation arrangements (the provision of space and power), SLAs and SLGs.
- 5.57 We have decided to require Openreach to pay SLGs proactively. Openreach should make an SLG payment for each day that it contractually fails to provide or repair a VULA service. These payments should continue until the situation is resolved, i.e. without a limit on the duration. These measures address our concern that Openreach has the ability and incentive to focus on new VULA installation or repair requests at the expense of those cases that are already late. We consider that the customer detriment associated with delayed repairs and installations is particularly pertinent for VULA because these services underpin the mass market supply of superfast and ultrafast broadband.
- 5.58 Responding to SSE's call for appropriate SLAs and SLGs on ancillary services, such as GEA Cablelink, we note that our SLA and SLG requirements apply to network access including ancillary services. However, we consider the industry is best placed to agree in the first instance what specific SLAs and SLGs should apply and to which ancillary services. We set out in Section 3 the principles, criteria and behaviours for negotiating SLAs and SLGs that should apply to future contract negotiations between Openreach and its customers. Where industry negotiations in relation to SLAs and SLGs do not result in an agreement through the Industry Working Group and working with the OTA2, stakeholders remain able to submit a complaint or refer a dispute to Ofcom.

*Charge controls*

- 5.59 In Section 1 we set out our approach to pricing of wholesale services in the WLA markets. In Volume 4 Sections 1 and 2, we set out in detail the decisions in relation to the design of each charge control and our justification for it, including for VULA.

### *Disapplication of the price controls in relation to copper retirement*

- 5.60 As with MPF, we consider that the VULA charge controls should support a progressive transition from legacy copper broadband to FTTP services while protecting consumers and ensuring that, where possible, there are no households left behind.
- 5.61 We have decided to disapply the charge control obligations in relation to FTTC 40/10,<sup>292</sup> for those premises where FTTP is available, in exchange areas where ultrafast broadband deployment is complete and after a minimum of two years have passed since ultrafast broadband was deployed to 75% of premises. In addition, in these cases the general requirement for fair and reasonable prices will not apply. This means that, if the relevant requirements are met, and subject to its contractual obligations with the telecoms provider, Openreach would be able to increase the wholesale charges for its VULA 40/10 services (except FTTP 40/10).
- 5.62 For the reasons set out in Section 2, we consider that these measures are appropriate and proportionate.

### *Conclusion*

- 5.63 In order to implement these measures, we have included the requirements outlined above in the SMP Conditions 1, 2 and 7 published at Volume 7. As set out in Section 3, sections 87(3), 87(6)(c) to (e) of the Act provide a basis for these SMP conditions, and we have taken into account the factors set out in section 87(4)<sup>293</sup>. In Volume 4 Sections 1 and 2, we set out our decisions relating to the implementation of the charge controls set out above.

## **Minimum contract period for VULA**

### **Background**

- 5.64 Openreach's VULA services are subject to minimum contract periods. Cancelling a service before the end of a minimum contract period causes a telecoms provider to incur a held-to-term charge from Openreach.

### **Our proposals**

- 5.65 We proposed a limit of one month on minimum contract periods for all VULA services, including FTTC, G.fast and FTTP.

### **Stakeholder responses**

- 5.66 Most stakeholders that commented on our proposal for minimum contract period for VULA expressed support for retaining this obligation during the next review period.<sup>294</sup>

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<sup>292</sup> By FTTC 40/10, we mean all VULA 40/10 (excluding FTTP 40/10).

<sup>293</sup> Our commentary on the section 87(4) factors set out in Section 3 also applies, where relevant, to the specific network access remedies.

<sup>294</sup> BUUK, page 7; Cumbria County Council, page 7; Gigaclear, paragraph 105; INCA, paragraph 157; KCOM, paragraph 2.2; SSE page 5; TalkTalk, paragraph 6.98; and [redacted] [a confidential respondent], page 6; in their responses to the January 2020 Consultation.

- 5.67 Vodafone suggested that Openreach could circumvent the remedy through pricing arrangements incentivising longer term contractual commitments from telecoms providers. It suggested that Ofcom remove the minimum contract period requirement and replace it with a requirement for termination for convenience without penalty.<sup>295</sup>

### Our reasoning and decisions

- 5.68 For the reasons set out below, we consider that the limit of one month on minimum contract periods for all VULA services, including FTTC, G.fast and FTTP, is appropriate and proportionate in relation to BT's market power in the WLA markets.
- 5.69 Reducing minimum contract periods promotes wholesale competition. At a time when we are seeking to promote network competition, measures that reduce barriers to switching are desirable because they avoid the risk that Openreach locks out new competitors from gaining customers through contract prohibitions.
- 5.70 Reducing minimum contract periods is also likely to promote retail competition. This is because telecoms providers have the ability and incentive to pass the costs which arise from held-to-term charges on to consumers, which may reduce consumers' incentives to switch between telecoms providers.
- 5.71 Furthermore, in relation to FTTC, in setting our charge control for the 40/10 service, we have allowed Openreach to fully recover its connection costs for these services through the initial connection charge, and its ongoing network costs through the rental charge. As such, Openreach will not need to rely on longer minimum terms and higher held-to-term charges in order to recover its costs.
- 5.72 We recognise the risk highlighted by Vodafone that Openreach may use anti-competitive practices to incentivise customers to stay on a contract for longer. We address this risk through our restrictions on Openreach's commercial flexibility and ability to offer geographic discounts (see Section 7). We note Vodafone's suggestion to replace the minimum one-month contract period with a termination for convenience at any time without penalty clause, but do not believe such a requirement offers any benefit over the minimal one-month period we are specifying.
- 5.73 In terms of the implementation of this requirement, SMP Condition 1 of the proposed legal instrument includes a power for Ofcom to direct the terms and conditions of network access provided in accordance with that condition. For the reasons set out above, we have decided to use this power to make a Direction (see Volume 7) limiting the length of the minimum contract period following VULA migrations and connections to no longer than one month for all VULA services.

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<sup>295</sup> Vodafone response to the January 2020 Consultation (Part 1), paragraphs 3.52-3.54, and Annex 1 (Vodafone's comments on the legal instruments), page 6.

## Requirement to provide SLU

### Background

5.74 Sub-loop unbundling (SLU) is a service offered by Openreach that allows telecoms providers to deploy their own equipment at a network distribution point (usually the location of the cabinet) and to use BT's lines from the cabinet to the customer. Telecoms providers either rent the entire sub-loop (the connection between the cabinet and the customer) or share it with Openreach.

### Our proposals

5.75 We proposed to retain an obligation on Openreach to provide network access in the form of SLU. We did not propose a specific price regulation on SLU services.

### Stakeholder responses

5.76 Most stakeholders did not raise any issues with our SLU proposal.

5.77 TalkTalk argued an SLU network access obligation is disproportionate. It said there is limited benefit to consumers because the number of unbundled cabinets is low and likely to fall further. TalkTalk said that keeping the SLU obligation would be inconsistent with Ofcom's deregulation of SMPF in 2018 which at the time had higher volumes. It also said removing the SLU obligation would have little impact on the risk of Openreach discrimination since it can discriminate by raising prices or reducing quality.<sup>296</sup>

### Our reasoning and decisions

5.78 For the reasons set out below, we consider that our measures are appropriate and proportionate in relation to BT's market power in the WLA markets.

#### *Network access to SLU*

5.79 Historically, the use of SLU has been relatively low. As noted in the 2018 WLA, since 2015 SLU numbers have been low and remain low. In the January 2020 Consultation, we indicated our understanding that SLU volumes had not changed significantly in recent years.<sup>297</sup> No new information has been provided to change that assessment.

5.80 Nevertheless, we understand that SLU is being used successfully by a small number of telecoms providers that are providing services in those areas where Openreach has not rolled out its superfast broadband and has not upgraded its local access connections to fibre.

5.81 We have considered whether the general remedies (the obligation to provide network access on fair and reasonable terms, conditions and charges) would be sufficient to ensure telecoms providers are able to continue to use SLU effectively. We agree with TalkTalk that

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<sup>296</sup> TalkTalk response to the January 2020 Consultation, paragraph 6.99.

<sup>297</sup> January 2020 Consultation, paragraph 5.68.

this would be consistent with our approach to SMPF. However, unlike SMPF, BT does not use SLU. Therefore, in the absence of a specific obligation, there is a risk that Openreach chooses to withdraw its SLU services.

5.82 For these reasons, we have decided to retain the obligation for Openreach to offer SLU to all telecoms providers who reasonably request such services.

5.83 We also retain our policy on vectoring<sup>298</sup> as set out in the 2018 WLA. In summary, we require that:

- where Openreach has activated vectoring, it would be reasonable for Openreach to deny a request for SLU, if Openreach could demonstrate that it had taken all reasonable steps to co-ordinate SLU with the vectoring; and
- where a telecoms provider is already buying SLU at a cabinet where Openreach wishes to deploy vectoring, it would be unlikely to be reasonable for Openreach to withdraw SLU.

5.84 In addition to this specific access service, we have decided to require Openreach to provide such ancillary services as may be reasonably necessary for the use of SLU, including backhaul from the cabinet. In this regard, we require Openreach to supply leased lines (in the LL Access areas where we have found BT to have SMP) which can be used for SLU backhaul.<sup>299</sup> Telecoms providers can, in certain cases, also build their own backhaul, including through use of the proposed PIA remedy.

#### *Disapplication of the network access obligation in relation to copper retirement*

5.85 To implement our approach to copper retirement, in Section 3, we have decided to limit the general network access obligation on BT's copper network. In effect, this will also disapply the specific requirement to meet new requests for SLU network access in exchange areas where ultrafast broadband is available to 75% of premises, for the premises where FTTP is available. This means that, if the relevant requirements are met, and subject to its contractual obligations with the telecoms provider, Openreach would be able to refuse the provision of a new SLU service (this allows the "stop sell" of copper services – see Section 2).

#### *No price controls*

5.86 While we consider it appropriate and proportionate to retain the obligation for Openreach to offer an SLU service to all telecoms providers who reasonably request such services, given the limited usage of SLU and the availability of alternative infrastructure and services, we have decided not to impose a specific form of price control on SLU services.

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<sup>298</sup> Vectoring uses noise cancellation technology to mitigate the effect of the electromagnetic interference that occurs on copper access connections, also known as cross-talk. Cross-talk can have a significant detrimental effect on VDSL speeds.

<sup>299</sup> As we discuss below, Openreach is not generally required to provide connections to intermediate aggregation nodes because of the potential negative impact on altnets' incentives to undertake fibre build. SLU backhaul is different in that SLU from a cabinet at an intermediate point in the network does not support the provision of gigabit-capable services due to the technical limitations of copper.

SLU services remain subject to a fair and reasonable charges obligation as discussed in Section 3.

#### *Disapplication of the fair and reasonable prices obligation in relation to copper retirement*

5.87 As with MPF and VULA, we have decided to disapply the general requirement for fair and reasonable prices, for those premises where FTTP is available, in exchange areas where ultrafast broadband deployment is complete and after a minimum of two years have passed since ultrafast broadband was deployed to 75% of premises. For the reasons set out in Section 2, we consider this approach to be appropriate and proportionate.

#### *Conclusion*

5.88 In order to implement these measures, we have set SMP Conditions 1 and 2, found in Volume 7. As set out in Section 3, section 87(3) of the Act provides a basis for these SMP conditions and we have taken into account the factors set out in section 87(4).<sup>300</sup>

## **Low bandwidth fibre product for narrowband services**

### **Background**

5.89 Openreach has announced that it will withdraw WLR by December 2025.<sup>301</sup> This withdrawal means that voice customers currently served by Openreach's WLR products (including ISDN) will need to migrate to an IP-based service on or before that date. In our statement on the future of fixed telephone services,<sup>302</sup> we noted that downstream service providers that offer services that rely on some of the technical characteristics of TDM networks<sup>303</sup> will need to test their equipment to see if it will continue to function over IP and then replace, upgrade or reconfigure it as appropriate. They also need to make sure that their customers are aware of the issue and take any necessary steps to maintain their services.<sup>304</sup>

5.90 Openreach has also announced a "stop-sell" for current WLR services for September 2023. This would mean new voice only customers from this date would need to be served using an alternative wholesale product from Openreach or via an alternative network or technology.

### **Market developments**

5.91 Openreach, alongside the rest of the industry, is working on ensuring that there are alternative services available to customers currently relying on WLR products, and that adequate communication is made with suppliers and end users.

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<sup>300</sup> Our commentary on the section 87(4) factors set out in Section 3 also applies, where relevant, to the specific network access remedies.

<sup>301</sup> Openreach, [Transitioning copper services to IP voice services](#), [accessed 11 March 2021].

<sup>302</sup> Ofcom, 22 February 2019, [The future of fixed telephone services](#), [accessed 11 March 2021].

<sup>303</sup> These include telecare devices, alarms, monitoring control systems used by the water, energy and transport industries, and payment card services.

<sup>304</sup> We discuss in further detail our expectations of industry during the copper retirement process in Section 2.

- 5.92 As noted above, Openreach has committed to maintain WLR products on fair and reasonable terms until their full withdrawal in 2025.
- 5.93 In March 2020, Openreach also launched a low bandwidth product to support existing voice-only and similar low bandwidth applications within its GEA footprint (FTTC and FTTP) after 2025. The product is 500kbit/s symmetric which should enable telecoms providers to provide high quality voice calls and key features like three-way calling, and has the same price as WLR.<sup>305</sup> This will support the migration to IP for those premises that wish to retain a fixed voice service that do not otherwise wish to receive a broadband service.
- 5.94 Finally, we have proposed to accept voluntary commitments from BT to cap increases to line rental and call charges for voice-only products to no more than inflation for five years – increases to line rental itself would be capped to inflation plus 2.5%.<sup>306</sup> The commitments would apply to all voice-only products and services taken by customers, regardless of the technology used to deliver the service.
- 5.95 As set out in Volume 2 Section 9, we have concluded that *ex ante* regulation is no longer appropriate for the WFAEL and ISDN markets. Given Openreach’s commitments in relation to WLR in both the WFAEL and ISDN markets and its recently launched low bandwidth product, we are not imposing any transitional regulation. We note that Openreach’s low bandwidth product falls within the scope of the general remedies set out in Section 3 and we consider that this service falls within the scope of a reasonable request for network access.

## Specific remedies in the LL Access markets

### Requirement to provide leased lines for fibre connectivity at all bandwidths

#### Background

- 5.96 Openreach’s leased lines are active services that include the provision of electronic transmission equipment for the conveyance of signals in addition to the underlying passive infrastructure and fibre. LL Access services provide a dedicated single link service from an end-user site to a point of aggregation. Openreach currently provides two key forms of LL Access services:
- Ethernet services, such as Openreach’s Ethernet Access Direct and Ethernet Backhaul Direct;<sup>307</sup> and

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<sup>305</sup> Openreach, [NGA009/20 GEA-FTTP and SOGEA 0.5/0.5 Mbps launch date and price notification](#), [accessed 11 March 2021].

<sup>306</sup> Ofcom, 10 December 2020, [Consultation: Protecting voice-only landline telephone customers](#), [accessed 11 March 2021].

<sup>307</sup> Ethernet means services using a standard networking protocol defined in IEEE 802.3, published by the Institute of Electrical and Electronics Engineer. Ethernet has speeds of 10Mbit/s, 100Mbit/s, 1Gbit/s, or 10Gbit/s.

- Wavelength division multiplex (WDM) services, such as Openreach's Optical Spectrum Access (OSA) and OSA Filter Connect.<sup>308</sup>

### Our proposals

5.97 We proposed to require Openreach to provide network access in the form of each of Ethernet and WDM leased lines at all bandwidths, including relevant ancillary services. We also proposed that leased lines at all bandwidths in Area 2 and Area 3 are subject to a charge control with prices indexed in line with inflation (CPI-0%). We did not propose specific price regulation (in the form of charge controls) in the HNR Area.

### Stakeholder responses

5.98 Stakeholders that commented on our Ethernet and WDM network access proposals in the LL Access markets expressed support for retaining this obligation during the next review period.<sup>309</sup>

5.99 Openreach said the proposed three layers of specific remedies in the LL Access Area 3 market (PIA, DFA and active leased lines) is a disproportionate volume of regulation. It suggested that Ofcom sets out a mechanism for deregulating active leased lines.<sup>310</sup>

5.100 TalkTalk supported the network access obligation but said the charge control for Ethernet services should be transitional while the market migrates to using DFA. It said this could be a price cap at cost for new circuits for one year (to allow time for telecoms providers to be ready to consume and sell DFA-based services) and on existing circuits for the remaining contract period (to protect customers already on leased lines and allow them to migrate).<sup>311</sup>

5.101 Some stakeholders commented on our proposal for network access to dark fibre in the LL Access Area 3 market, which we discuss in Section 6.

### Our reasoning and decisions

5.102 For the reasons set out below, we consider that the measures we impose are appropriate and proportionate in relation to BT's market power in the LL Access markets.

#### *Network access to LL Access services*

5.103 In the LL Access markets, competing telecoms providers extensively buy leased lines from Openreach to compete in the provision of business connectivity services downstream. Currently, around [redacted] leased lines across all bandwidths are provided by third-party

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<sup>308</sup> WDM is a technology that uses different colours (wavelengths) of light to create separate circuits over the same fibre, or pairs of fibre. WDM leased lines typically have multiple circuits, each running at 10Gbit/s or more.

<sup>309</sup> BUUK, page 7; Cityfibre, paragraphs 5.96 and 5.97; Cumbria County Council, page 7; INCA, paragraph 157; SSE, page 5; [redacted] [a confidential respondent], page 9; and [redacted] [a confidential respondent], page 6, in their responses to the January 2020 Consultation.

<sup>310</sup> Openreach response to the January 2020 Consultation, paragraphs 7.81-7.82, 7.99.

<sup>311</sup> TalkTalk response to the January 2020 Consultation, paragraphs 7.162-7.172.

- telecoms providers using Openreach's LL Access services. We project that number to remain stable within the review period.
- 5.104 Absent regulation, Openreach would have the ability and incentive to refuse to provide access to its LL Access network or not provide access on terms that would secure efficient investment and innovation, both in the wholesale LL Access markets and the related downstream retail markets. This would result in consumer harm in the form of service degradation, restricted choice of provider and/or higher prices.
- 5.105 Although the general network access remedy we impose in Section 3 is aimed at addressing these competition concerns, it does not provide telecoms providers with as much certainty as to the basis on which they have access. Given the importance of Ethernet and WDM services for the provision of leased lines and to support downstream services, we consider it appropriate to go beyond the general network access obligation to address the above concerns and ensure telecoms providers and consumers are sufficiently protected.
- 5.106 Therefore, we have decided to retain the specific access obligation on Openreach to provide network access to each of Ethernet and WDM leased lines at all bandwidths. We are satisfied that the form of specific access obligation on each of Ethernet and WDM leased lines we are imposing is the minimum necessary.
- 5.107 In response to Openreach's suggestion to introduce a mechanism for deregulating active leased lines in Area 3, and TalkTalk's suggestion that regulation (including price controls) on Ethernet should be temporary, we consider this would be premature. As set out in Section 1 and 6, we expect over time DFA to become the primary access remedy in Area 3 and thus to eventually deregulate active leased lines. However, as set out in Annex 9, we expect migration to DFA to be gradual over this review period because, among other things, migration of existing circuits is often a customer-led event dependent on the date of contract renewal. It is therefore appropriate to continue to protect existing customers by maintaining regulation of active leased lines for the duration of this review period.
- 5.108 The LL Access markets encompass all access circuits, including circuits between an end-user site and a telecoms provider's network node or data centre. We only require Openreach to provide LL Access services between a BT exchange and an end-user site, or between two end-user sites.<sup>312</sup>
- 5.109 In November 2020, Openreach announced that it was going to start imposing an annual surcharge for leased line circuits being used to aggregate FTTP to multiple premises, with effect from 1 January 2021. Openreach said this was because these circuits are not part of the relevant market where it has SMP.<sup>313</sup> A number of stakeholders have asked us to clarify our position on the new surcharge.

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<sup>312</sup> Our definition of end-user site includes residential premises, business premises, Multi Dwelling Units, and mobile base station sites, including where these are daisy chained. See Annex 2.

<sup>313</sup> Openreach, 30 November 2020, [GEN102/20 Price changes for leased line circuits being used to aggregate FTTP to multiple premises](#), [accessed 11 March 2021].

- 5.110 Generally, the way we define markets, for the purpose of ex ante regulation, is based on the service characteristics and the geographic area they are in – not what use the service is being put to. As noted in Volume 2, we define LL Access circuits as dedicated circuits between an end user site and the first point of aggregation (or in some cases between end user sites). Therefore, leased line circuits being used to aggregate FTTP to multiple premises may fall within the LL Access markets, depending on whether a FTTP cabinet is viewed as an end-user site. However, the network access obligations that we impose in the LL Access markets reflect our strategy to promote network competition where it is viable. We will interpret the network access obligations in the LL Access markets not to require Openreach to provide active leased line circuits or dark fibre access circuits where they would be used to aggregate FTTP to multiple premises for the purposes of deploying a fibre access network. We do not consider such access to be reasonable as telecoms providers already deploying their own fibre access networks are able to use PIA for these connections.
- 5.111 In addition to the specific access service, a number of ancillary services are necessary to enable and support the provision of LL Access services, including as a minimum space and power, site access, Cablelink, interconnect, Time-Related Charges (TRCs), Excess Construction Charges (ECCs) and any other supporting services used for installation, maintenance, modification, and ceasing of this specific access service. Our specific access remedy requires Openreach to provide these ancillary services and the obligations remain as ancillary services develop or get replaced over time.
- 5.112 In relation to network adjustments for dark fibre, Openreach argued that the scope of the obligation should be limited in two ways. First, it said that network extensions should be out of the scope of our regulation and sought further guidance on the distinction between an adjustment and an extension. Second, it proposed adding a cost threshold of £5,000 for incremental network build (equating to about 50m of duct and fibre build) based on Ofcom’s “indicative-dig-distance-cost-model-1”. Openreach said its comments also apply to active leased lines.<sup>314</sup>
- 5.113 While Openreach is not required to construct new network on behalf of other telecoms providers, this does not mean that it is never required to build or install new physical infrastructure or fibre assets in order to supply leased lines to its customers. We note that Openreach has been historically providing network adjustments in relation to active leased lines. We regulate network adjustments for active leased lines in particular by requiring Openreach to provide ECCs as an ancillary service and regulating its price (Volume 4 Section 5).<sup>315</sup> We do not consider it appropriate, as Openreach suggested, to include a cost threshold as an additional criterion. We set out our reasoning in Section 6.
- 5.114 We note Truespeed’s comment that Openreach’s ECC charges tend to be high and that telecoms providers should be able to bid out contestable ECCs to get a market rate.<sup>316</sup> We

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<sup>314</sup> Openreach response to the January 2020 Consultation, paragraphs 7.7, 7.150-7.184.

<sup>315</sup> We also regulate network adjustments in relation to PIA (Section 4) and dark fibre (Section 6).

<sup>316</sup> Truespeed response to the November 2020 Consultation, page 7.

do not consider such requirement to be necessary in the LL Access and IEC markets. As set out in Volume 4 Section 5, we impose a basis of charges obligation on all contestable ECCs.

#### *Reference Offer*

- 5.115 We have decided to retain, for the purposes of transparency, the existing specific Reference Offer requirements for Ethernet services. These require Openreach to include in the Ethernet RO SLAs and SLGs for the completion of the provision of service and fault repair times.
- 5.116 We do not impose any specific RO requirements for WDM services because we consider that they need more time to mature before it would be appropriate to do so.

#### *Charge controls*

- 5.117 In Section 1 we set out our approach to pricing of wholesale services in the LL Access market. In Volume 4 Sections 1 and 2 we set out in detail the proposed design of each charge control and our justification for it.

#### *Conclusion*

- 5.118 In order to implement these decisions, we have included the requirements outlined above in SMP Conditions 1 and 2 published at Volume 7. As set out above, section 87(3) of the Act provides a basis for these SMP conditions and we have taken into account the factors set out in section 87(4)<sup>317</sup>.

## **Classification of circuits that cross boundaries between LL Access markets**

- 5.119 In the LL Access markets, we have decided that circuits that cross boundaries between LL Access markets should be classified as set out in Table 5.3.

**Table 5.3: Classification of circuits that cross boundaries between LL Access markets**

<b>Classification of circuit</b>	<b>Location of circuit ends</b>
<b>CLA</b>	Both ends are in the CLA
<b>HNR</b>	One end is in the HNR area and the other in the CLA Both ends are in the HNR Area
<b>Area 2</b>	One end is in Area 2 and the other in the CLA, or the HNR Area Both ends are in Area 2
<b>Area 3</b>	One or both ends are in Area 3

<sup>317</sup> Our commentary on the section 87(4) factors set out in Section 3 also applies, where relevant, to the specific network access remedies.

- 5.120 Therefore, where circuits serve sites located in different geographic markets, the circuit should be classified as being in the least competitive market, where the CLA is the most competitive, followed by the HNR Area, then Area 2, and finally Area 3.

## Specific remedies in the IEC markets

### Requirement to provide leased lines for fibre connectivity at all bandwidths

#### Background

- 5.121 As noted above, Openreach's leased lines are active services that include the provision of electronic transmission equipment for the conveyance of signals in addition to the underlying passive infrastructure and fibre. Leased lines in the form of inter-exchange connectivity provide a service to carry aggregated end-user traffic between points of aggregation (BT exchanges) which includes connections between access areas. As with leased lines in the LL Access markets, Openreach currently provides two key forms of inter-exchange connectivity:
- Ethernet services; and
  - WDM services.

#### Our proposals

- 5.122 We proposed to require Openreach to provide network access in the form of each of Ethernet and WDM leased lines at all bandwidths, including relevant ancillary services. We also proposed that inter-exchange connectivity at all bandwidths in BT Only and BT+1 exchanges is subject to a charge control with prices indexed in line with inflation (CPI-0%).

#### Stakeholder responses

- 5.123 Stakeholders that commented on our Ethernet and WDM network access proposals in the IEC market expressed support for retaining this obligation during the next review period.<sup>318</sup>
- 5.124 Similar to its response regarding the LL Access market, TalkTalk supported the network access obligation but said we should impose a transitional charge control for Ethernet services whilst the market migrates to using DFX.<sup>319</sup>
- 5.125 Some stakeholders commented on our proposal for network access to dark fibre from relevant BT exchanges, which we discuss in Section 6.

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<sup>318</sup> BUUK, page 7; CityFibre, paragraphs 5.96 and 5.97; Cumbria County Council, page 7; INCA, paragraph 157; SSE, page 5; [X] [a confidential respondent], page 9; and [X] [a confidential respondent], page 6; in their responses to the January 2020 Consultation.

<sup>319</sup> TalkTalk response to the January 2020 Consultation, paragraphs 7.173-176. We discuss dark fibre inter-exchange (DFX) in Section 6.

## Our reasoning and decisions

- 5.126 For the reasons set out below, we consider that the measures being imposed are appropriate and proportionate in relation to BT's market power in the IEC markets.

### *Network access to IEC services*

- 5.127 Openreach's circuits in the WLA and LL Access markets have handover points at BT exchanges. Competing telecoms providers need to use Openreach's services to connect these exchanges with a competitive backhaul and/or core network. Therefore, access to inter-exchange connectivity is an important enabler of competition in the WLA and LL Access markets.
- 5.128 Absent regulation, Openreach would have the ability and incentive to refuse to provide access to its inter-exchange connectivity network or not provide access on terms that would secure efficient investment and innovation, both in the relevant wholesale markets (WLA, LL Access and IEC) and the related downstream retail markets. This would result in consumer harm in the form of service degradation, restricted choice of provider and/or higher prices.
- 5.129 Although the general network access remedy we impose in Section 3 is aimed at addressing these competition concerns, it does not provide telecoms providers with as much certainty as to the basis on which they have access. Given the importance of Ethernet and WDM services for the support of broadband and other leased lines, we consider it appropriate to go beyond the general network access obligation to address the above concerns and ensure telecoms providers and consumers are sufficiently protected.
- 5.130 Therefore, we have decided to retain the specific access obligation on Openreach to provide network access to each of Ethernet and WDM leased lines at all bandwidths for the provision of relevant circuits to establish inter-exchange connectivity. We are satisfied that the form of specific access obligation on each of Ethernet and WDM leased lines we are imposing is the minimum necessary.
- 5.131 Similar to our approach to network access in the LL Access Area 3 market, we consider that setting a time limit on the control on leased lines in the IEC market would be premature. As set out in Annex 9, take-up of DFX is currently low and we expect migration to DFX to be gradual over this review period. It is therefore appropriate to continue to protect existing customers by maintaining regulation of active leased lines for the duration of this review period.
- 5.132 We require Openreach to provide leased lines from all non-competitive BT exchanges. As we set out in Volume 2 Section 8, we consider trunk links between BT exchanges and data centres, and between BT exchanges and network nodes, to be competitive. Under our SMP conditions, therefore, Openreach is not required to provide active products on these routes.
- 5.133 In addition to the specific access services, a number of ancillary services are necessary to enable and support the provision of inter-exchange connectivity, including as a minimum space and power, site access, Cablelink, interconnect, TRCs, and any other supporting

services used for installation, maintenance, modification, and ceasing of this specific access service. Our specific access remedy requires Openreach to provide these ancillary services. In Volume 4 Section 5, we set out pricing arrangements for these ancillary services.

- 5.134 Following the update of our market analysis (as discussed in Volume 2 Section 8 and Annex 6), we have reclassified some BT exchanges, including the deregulation of some BT Only and BT+1 exchanges. To avoid service interruption, we have decided to require Openreach to continue the supply of active leased lines from deregulated exchanges that have been ordered or are already live on 18 March 2021, for a transitional period of one year until 31 March 2022. Otherwise, Openreach would, subject to its contractual obligations with telecoms providers, be able to terminate certain active leased lines that are currently being used for inter-exchange connectivity from those exchanges. We consider that this transitional arrangement is therefore necessary to ensure sustainable transition for telecoms providers from Openreach's active leased lines to alternative services. We consider that there is a low risk of stranded assets for the transitioning telecoms providers because, among other reasons, active equipment would represent a fraction of the overall cost for a circuit and could be reused for other passive or active circuits.

#### *Reference Offer*

- 5.135 We have decided to retain, for the purposes of transparency, the existing specific RO requirements for Ethernet services. These require Openreach to include in the RO SLAs and SLGs for the completion of the provision of service and fault repair times.
- 5.136 We do not impose any specific RO requirements for WDM services because we consider they need more time to mature before it would be appropriate to do so.

#### *Charge controls*

- 5.137 In Section 1 we set out our approach to pricing of wholesale services in the IEC markets. In Volume 4 Section 3, we set out in detail the design of each charge control and our justification for it.

#### *Conclusion*

- 5.138 In order to implement these measures, we have included the requirements outlined above in the SMP Conditions 1, 2 and 7 published at Volume 7. As set out above, sections 87(3) and 87(6)(c) to (e) of the Act provide a basis for these SMP conditions, and we have taken into account the factors set out in section 87(4)<sup>320</sup>.

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<sup>320</sup> Our commentary on the section 87(4) factors set out in Section 3 also applies, where relevant, to the specific network access remedies.

## Classification of circuits that cross boundaries between IEC markets

5.139 In the IEC market, we have decided that circuits that cross boundaries between IEC markets should be classified as set out in Table 5.4.

**Table 5.4: Classification of circuits that cross boundaries between IEC markets**

Classification of circuit	Location of circuit ends
<b>BT+2</b>	Both ends are in BT+2
<b>BT+1</b>	Both ends are in BT+1
	One end is in BT+1 and the other in BT+2
<b>BT Only</b>	One or both ends are in BT Only

5.140 Therefore, where circuits serve sites located in different geographic markets, the circuit should be classified as being in the least competitive market, where the BT+2 is the most competitive, followed by BT+1 and finally BT Only.

## 6. Specific remedies: dark fibre

- 6.1 In this section, we set out our decisions to require Openreach to provide access to dark fibre. Specifically, we have decided to:
- introduce a requirement on Openreach to provide access to dark fibre in the LL Access Area 3 market (we refer to this as dark fibre access, or DFA); and
  - continue to impose a requirement on Openreach to provide access to dark fibre in the IEC market from BT Only exchanges with no competing networks close by (we refer to this as dark fibre inter-exchange, or DFX).
- 6.2 For each requirement, we summarise our consultation proposals and stakeholders' responses, and explain our decisions in terms of: why we are imposing the remedy; the design of the remedy; our approach to non-discrimination; our approach to pricing; specific requirements for the publication of a reference offer; and (in the case of DFA) implementation of the remedy.<sup>321</sup>
- 6.3 We have adopted most dark fibre proposals from our January 2020 Consultation. The main change is increasing the DFA implementation period, as proposed in our November 2020 Consultation. We provide a summary of our decisions in the table below.

**Table 6.1: Summary of our decisions**

	Dark fibre access	Dark fibre inter-exchange
<b>Scope</b>	Dark fibre for the supply of leased lines access in Area 3.	Dark fibre for the supply of inter-exchange connectivity from BT Only exchanges with no competing networks close by. <sup>322</sup>
<b>Design: circuit configurations</b>	Openreach is required to provide dark fibre terminating segments of the following types: <ul style="list-style-type: none"> <li>• access segments;</li> <li>• access segments including a main link between exchanges; and</li> <li>• end-to-end access segments without a main link.</li> </ul>	Openreach is required to provide dark fibre backhaul segments between exchanges.
<b>Design: parity with active wholesale products</b>	DFA to be comparable to the passive optical elements of the corresponding active wholesale access products (EAD and EAD LA).	DFX to be comparable to the passive optical elements of the corresponding active wholesale inter-exchange connectivity products (EAD).

<sup>321</sup> Openreach will only need to implement the DFA remedy because the DFX remedy has already been implemented.

<sup>322</sup> That is, BT Only exchanges that are not within 100m of a competing Principal Core Operator's (PCO) network. We list all BT Only exchanges and identify which are subject to the DFX remedy in Volume 7, Schedule 4.

	Dark fibre access	Dark fibre inter-exchange
<b>Design:</b> arrangements for provision of new infrastructure	Openreach is required to lay new access and main link fibre segments subject to reasonable limits described below.	Openreach is required to lay new main link fibre segments subject to reasonable limits described below.
<b>Design:</b> single and dual fibre circuits	Openreach is required to provide single and dual fibre circuits.	
<b>Design:</b> processes for provisioning, repair & migration	The processes developed for the 2016 BCMR dark fibre remedy are suitable for this remedy.	The processes developed for the 2019 BCMR DFX remedy are suitable for this remedy.
<b>Design:</b> ancillary services (excluding ECCs)	Accommodation, interconnection, Cablelink, TRCs and patch panels, to be provided where reasonably necessary to use dark fibre. Ancillary facility enabling external network termination where there is no space and power in the local exchange to be provided for DFX only.	
<b>Design:</b> ECCs (excess construction charges)	ECCs apply to customer specific extensions to Openreach's network which are necessary to connect to an end-user site.	Not applicable.
<b>Non-discrimination</b>	Where Openreach uses dark fibre to provide active circuits downstream, it is exempt from EOI, and no undue discrimination applies. Where Openreach supplies dark fibre to BT or non-BT customers, EOI applies.	
<b>Pricing</b>	Cost-based charge controls. ECCs, where applicable.	Cost-based charge controls.
<b>Reference Offer</b>	To be agreed and finalised as part of industry negotiations.	
<b>Implementation</b>	Openreach to implement as follows: <ul style="list-style-type: none"> <li>• by 17 Aug 2021: automate provision and publish RO, except SLAs/SLGs;</li> <li>• by 1 Oct 2021: automate repair; and</li> <li>• by 1 Jun 2022: automate all other functionality and publish SLAs/SLGs.</li> </ul>	Not applicable – Openreach has already launched DFX.
<b>Quality of Service</b> <sup>323</sup>	QoS reporting requirements apply from 1 April 2021. QoS standards apply from 1 June 2022.	QoS standards and reporting requirements apply from 1 April 2021.

<sup>323</sup> We explain our approach to dark fibre QoS standards in Volume 5 Section 4.

## Aim and effect of the Dark Fibre Access (DFA) remedy

### Our proposals

- 6.4 In the January 2020 Consultation, we proposed to introduce a requirement on Openreach to provide DFA in the LL Access Area 3 market. We set out why we believed any adverse impacts would be proportionate to our overall aim.
- 6.5 We proposed that DFA is not an appropriate remedy for the LL Access Area 3 market because its attractiveness as a network access product risks undermining investment in competing networks.

### Stakeholder responses

- 6.6 Most stakeholders that commented broadly agreed with the proposed DFA remedy.<sup>324</sup>
- 6.7 BUUK, TalkTalk, UKCTA, Vodafone, PAG and [redacted] [a confidential respondent] agreed with the proposed DFA remedy but argued it should also be introduced in Area 2 and the HNR Area. TalkTalk and Vodafone further argued that it should also be introduced in the CLA. They said Ofcom has not analysed the significant benefits to telecoms providers of having access to both DPA and DFA at regulated prices.<sup>325</sup>
- 6.8 Three agreed with the proposed DFA remedy and argued it should be extended to a new “Area 2.5”, comprising those parts of Area 2 where no competing leased lines are expected (including mobile access tail connectivity) or competing telecoms providers have less certain plans to build such leased lines.<sup>326</sup>
- 6.9 TalkTalk, UKCTA, Vodafone, PAG and [redacted] [a confidential respondent] said that DFA will not undermine network investment and that, if this was a concern, Ofcom could apply flexible pricing, rather than pricing at cost. Three suggested that dark fibre in Area 2.5 could be priced at the cost of a reasonably efficient operator (REO) or adjusted equally efficient operator (adjusted EEO).<sup>327</sup>
- 6.10 Several stakeholders agreed with the benefits of dark fibre as identified in our January 2020 Consultation.<sup>328</sup>

<sup>324</sup> ACNI, page 3; BUUK, Q6.1; Gigaclear, paragraphs 107 and 108; PAG, paragraphs 5.2-5.8; Scottish Government, page 3; SSE, Q6.1; TalkTalk, paragraphs 7.111-7.177; Three, paragraphs 1.4 and 1.5; UKCTA, paragraphs 60-61; Vodafone, Part 2, paragraphs 6.1, 6.5-6.15; Welsh Government, page 2; [redacted] [a confidential respondent], Q6.1; [redacted] [a confidential respondent], Q1.1 and Q6.1; and [redacted] [a confidential respondent], Q6.1, in their responses to the January 2020 Consultation.

<sup>325</sup> BUUK, Q6.1; PAG, paragraphs 5.2-5.8, 6.5-6.11; TalkTalk, paragraphs 7.111-7.177; UKCTA, paragraphs 60-61; Vodafone, Part 2, paragraphs 6.1, 6.5-6.15, and Part 3, paragraphs 12.7-12.17; and [redacted] [a confidential respondent], Q1.1 and Q6.1, in their responses to the January 2020 Consultation.

<sup>326</sup> Three response to the January 2020 Consultation, paragraphs 8.45-8.47, 9.1-9.5, 10.1-10.9.

<sup>327</sup> PAG, paragraphs 6.6; TalkTalk, paragraphs 7.167-7.171; UKCTA, paragraph 60; Vodafone, Part 2, paragraphs 6.1, 6.5-6.15, and Part 3, paragraph 12.17; and [redacted] [a confidential respondent], Q1.1 and Q6.1, in their responses to the January 2020 Consultation.

<sup>328</sup> CityFibre, paragraph 5.99; TalkTalk, paragraphs 7.150-7.155; Three, paragraphs 2.36-2.37, 7.8; Vodafone, Part 2, paragraphs 6.7-6.9; and Welsh Government, page 2, in their responses to the January 2020 Consultation; and PAG response to the March 2019 Consultation, paragraph 16.

- 6.11 Some stakeholders disagreed with the proposed DFA remedy.<sup>329</sup>
- 6.12 Openreach said Ofcom is dismissive of the scope for PIA to offer a competitive constraint to DFA in Area 3 and should allow for the PIA remedy to play out ahead of the imposition of an additional passive remedy.<sup>330</sup>
- 6.13 Openreach said Ofcom has overstated the benefits of the DFA remedy. It said innovation is already possible in an active products environment and market requirements are being met using existing products and processes. Openreach also said the benefits of migration from existing low bandwidth active services to DFA are difficult to establish.<sup>331</sup>
- 6.14 Openreach argued Ofcom had understated the adverse impacts of DFA, as there will be “overly rapid” migration from active leased lines to DFA as a result of the proposed DFA charge control being below cost. It said this migration will result in under-recovery of costs, divert engineering resource away from FTTP rollout in Area 3, and make it more difficult for Openreach to meet QoS requirements nationally.<sup>332</sup>
- 6.15 BT Group also disagreed with the proposed DFA remedy. It supported Openreach’s analysis of potential migration to DFA and its associated adverse impacts.<sup>333</sup>
- 6.16 CityFibre said an effective PIA product is likely to be sufficient to address Ofcom’s competition concerns in Area 3, particularly given pricing for leased lines is typically distance related and connection distances in rural areas are typically fairly long. CityFibre also considered that at present there is great uncertainty as to who, when and where will deploy in Area 3. Finally, CityFibre said introducing DFA in Area 3 increases the likelihood of Openreach introducing the product in Area 2 at similar price, which would have a significant detrimental impact on the investment incentives in that area.<sup>334</sup>
- 6.17 INCA said DFA would cannibalise active leased lines in Area 3 and deter altnet investment in business connectivity services. It said DFA would also reduce the available economies of scope with the WLA market and provide a further disincentive to investment in fibre networks by altnets. INCA said that if DFA is mandated in Area 3, pricing should allow efficient entry by altnet providers.<sup>335</sup>
- 6.18 Although Telefonica said it is generally supportive of dark fibre, it disagreed with the imposition of the DFA remedy in this review period. Telefonica said telecoms providers (including itself) are unlikely to use DFA because developing their capacity to do so will be costly and requires that the product is available at scale, i.e. outside Area 3. Telefonica said Ofcom should instead focus on protecting consumers through tighter regulation on active leased lines.<sup>336</sup>

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<sup>329</sup> Axione, paragraph 5.48; BT Group, paragraph 5.46; INCA, paragraphs 140 and 141; Openreach, paragraphs 1.10, 1.23(c); and Telefonica, paragraphs 5.1-5.11, in their responses to the January 2020 Consultation.

<sup>330</sup> Openreach response to the January 2020 Consultation, paragraphs 7.2, 7.97 and 7.98.

<sup>331</sup> Openreach response to the January 2020 Consultation, paragraphs 7.94 and 7.95.

<sup>332</sup> Openreach response to the January 2020 Consultation, paragraphs 7.5, 7.96, 7.102-7.106, 7.107-7.123.

<sup>333</sup> BT Group response to the January 2020 Consultation, paragraphs 5.37-5.41, 5.46.

<sup>334</sup> CityFibre response to the January 2020 Consultation, paragraphs 5.92-5.95, 5.98-5.131.

<sup>335</sup> INCA response to the January 2020 Consultation, paragraphs 140 and 141.

<sup>336</sup> Telefonica response to the January 2020 Consultation, paragraphs 5.1-5.11.

## Our reasoning and decisions

6.19 We have decided to impose a specific network access remedy in the form of dark fibre in the LL Access Area 3 market. We consider that:

- a dark fibre remedy for leased lines access is appropriate and proportionate;
- the remedy is limited to the LL Access Area 3 market; and
- any adverse impacts of the remedy are proportionate to our overall aim.

### A dark fibre remedy for leased lines access is appropriate and proportionate

6.20 In Volume 2 Section 8, we set out our conclusion that, as a result of BT having SMP in the provision of leased lines access in Area 2, Area 3 and the HNR Area, Openreach has the incentive and ability to refuse to supply access and thus restrict competition in the provision of products and services in the relevant downstream markets. We have therefore considered whether Openreach should be required to provide specific network access in the form of DFA.

6.21 Although historically we required Openreach to offer leased lines access circuits as an active product, the characteristics of these services were determined by choices made by Openreach and developments negotiated with the industry as a whole. Access to dark fibre will provide users with a more flexible input to downstream services. This has the potential to deliver several benefits:<sup>337</sup>

- users will be able to choose their own electronic equipment, enabling them to deliver services that better suit their needs and the needs of their customers;
- users will be able to make decisions on bandwidth upgrades based on the underlying incremental costs of providing the equipment required;<sup>338</sup> and
- users will be able to eliminate inefficient active equipment duplication.<sup>339</sup>

6.22 These benefits will in turn allow telecoms providers to better compete on price, service quality, and product offering in downstream markets and in doing so, more effectively address BT's SMP.<sup>340</sup> We consider that the current absence of dark fibre access has the effect of hindering efficiency, innovation, and effective and sustainable competition in the corresponding downstream markets, ultimately against end-users' interests.<sup>341</sup>

6.23 Although the general network access remedy we impose in Section 4 is aimed at addressing this competition problem, implementing a dark fibre product in response to a reasonable access request under this provision is likely to require complex industry negotiations about the specific terms of access, including the geographic scope of the dark

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<sup>337</sup> We discuss the benefits of dark fibre and the likely take-up of DFA in more detail in Annex 9.

<sup>338</sup> As discussed in Annex 9, this lowers the cost of upgrading bandwidth and ensures upgrade decisions are based on incremental costs.

<sup>339</sup> We also acknowledge Vodafone's argument that dark fibre could reduce the carbon footprint of network operators by reducing equipment duplication and power consumption, and enabling simpler network design.

<sup>340</sup> We expect telecoms providers will use dark fibre over active products where they are able to realise the benefits discussed above (i.e. cost and flexibility advantages). Dark fibre will also affect the existing access products.

<sup>341</sup> We note that the OSA Filter Connect product offered by Openreach does not deliver the same benefits as dark fibre. This is discussed in more detail in Annex 9.

fibre product. This would risk uncertainty and delay, undermining the effectiveness of our regulation. A specified network access remedy in the form of DFA would directly address the identified competition problems by requiring BT to provide access to its dark fibre on regulated terms as quickly as reasonably possible.

- 6.24 In light of this, we have decided to impose a requirement on Openreach to provide dark fibre for leased lines access.
- 6.25 We do not agree with Openreach that market requirements are being met using existing products and processes. Telecoms providers have been arguing in support of dark fibre and its benefits to innovation since we imposed and revoked the remedy in the BCMR 2016 and have confirmed their support for the remedy in response to our January 2020 Consultation.

### **The remedy is limited to the LL Access Area 3 market**

- 6.26 As set out in Volume 1, our strategy, taking into account our legal duties, is to promote investment in gigabit-capable networks by Openreach and other companies in order to promote network-based competition.
- 6.27 As explained in Section 1, our overarching remedy is to require access to BT's ducts and poles, as this will support competitive investment. However, we recognise that network competition will not develop uniformly across the UK so our approach in downstream markets differentiates between places where there is, or there is likely to be potential for, material and sustainable competition to BT in the commercial deployment of competing networks (Area 2), and places where there is not, and there is unlikely to be potential for, such competition (Area 3):
- a) In Area 2, our objective is to promote competition and investment in gigabit-capable networks by Openreach and other telecoms providers. The resulting network competition will provide increasing protection for consumers in the long term, and in many areas effective competition may emerge such that the need for regulation falls away. This will take time and therefore we seek to protect consumers and existing models of downstream competition in the short term by maintaining access to Openreach's existing wholesale broadband and leased lines services.
  - b) In Area 3, our objective is to promote investment in gigabit-capable networks by Openreach. We also seek to promote competition based on access to BT's networks and protect consumers.
- 6.28 Following this approach, we only impose DFA in areas where we believe there is not, and there is unlikely to be potential for, material and sustainable competition to BT in the commercial deployment of competing networks. DFA is an improved form of network access which is likely to be more attractive than existing active wholesale leased lines services (see discussion of benefits above). Imposing DFA where there is, or there is likely to be potential for, competitive network investment would go further than maintaining access to existing services. The consequence would be to increase incentives for telecoms providers to continue to rely on access to Openreach's network rather than build new

networks themselves or enter commercial arrangements with alternative network builders. This in turn removes an important source of demand (and revenue) for telecoms providers looking to deploy competing networks.

- 6.29 Accordingly, we have decided to impose the DFA remedy in the LL Access Area 3 market, and not in the LL Access Area 2 market. We address stakeholder arguments related to this below.

### *Area 3*

- 6.30 The LL Access Area 3 market comprises those parts of the UK where we think there is not, and there is unlikely to be potential for, material and sustainable competition to BT in the commercial deployment of competing networks. Therefore, we consider the risk of DFA undermining the deployment of competing networks is small.
- 6.31 We acknowledge that a number of providers have indicated that they have ambitions to build in Area 3, with some competitive investment taking place today. However, as explained in Volume 2 Section 7, we understand that many of these providers are focussed on broadband products for homes and businesses, rather than leased lines. Where this is the case, the risk of DFA undermining this investment is small.
- 6.32 Moreover, any impact on competitive network investment in Area 3 (which we do not expect to be widespread) needs to be set against the significant benefits of imposing DFA in Area 3. Our analysis suggests that even though Area 3 comprises largely rural areas and smaller urban areas, there is significant potential leased lines demand (based on the number of large business and mobile backhaul sites).<sup>342</sup> The greater flexibility DFA offers compared to Openreach's active products will also allow telecoms providers to offer more similar products in Area 3 as those offered in areas where they rely on alternative networks (i.e. in Area 2 or the HNR Area).
- 6.33 We disagree with the argument made by BT, Openreach and CityFibre, that the PIA remedy should be allowed to bed in and DFA should only be introduced if PIA has proved to be ineffective. We do not expect material and sustainable network competition to develop in Area 3 and so the PIA remedy would not be sufficient to address BT's SMP in the downstream markets. Therefore, we consider that it is appropriate to impose additional remedies to promote competition downstream based on access to BT's network. Given the advantages that it offers over active leased lines products, we consider that DFA should be the primary focus of our regulation in the LL Access Area 3 market.
- 6.34 We do not share CityFibre's concern that introducing DFA in Area 3 makes it more likely that Openreach will introduce a similar product in Area 2 on a commercial basis. CityFibre suggests this could be the case if the costs of implementing the product nationally are not much higher than introducing it only in Area 3, or because of concerns about the reputational impact of not offering a product nationally. While these may be

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<sup>342</sup> See Annex 5.

considerations for Openreach, the decision to offer dark fibre commercially in Area 2 will ultimately depend on whether it is profitable.<sup>343</sup>

- 6.35 Virgin Media requested clarity around the application of the dark fibre remedy in geographic areas that are reclassified from Area 3 to Area 2 in the future.<sup>344</sup> We will consider the appropriate approach to dealing with this issue in our next review. We note that any change to the definition of the LL Access Area 3 market would likely be in view of changes in the market dynamics, i.e. alternative services would have become available to telecoms providers.

#### *Area 2*

- 6.36 The LL Access Area 2 market includes those parts of the UK where there is, or where there is likely to be potential for, material and sustainable competition to BT in the commercial deployment of competing networks. For the reasons set out above, introducing a regulated dark fibre product in Area 2 would undermine incentives to invest in competing networks, and therefore the opportunity for further network competition to emerge and become established.
- 6.37 Some stakeholders challenged this view. As explained in Annex 3, we have evidence of significant planned network build in Area 2, facilitated by the duct and pole access remedy we are continuing to impose, which we believe has potential to lead to material and sustainable competition to BT in the commercial deployment of competing networks. There is also evidence that large customers of Openreach's active leased lines are actively considering opportunities to source dark fibre from alternative networks (including those not yet built). In particular, with increasing demand for mobile data and the roll out of 5G, MNOs have been looking at alternatives to Openreach's existing products to meet their demand for higher capacity connections to mobile sites (see Volume 2 Section 2).
- 6.38 Demand from users of leased lines plays an important role in some business plans for competitive network investment, including large users acting as anchor tenants supporting a larger scale investment. Where operators are looking to deploy networks offering both broadband and leased lines, we have evidence to suggest that leased lines could still play an important role in enabling the business case for investment.<sup>345</sup> In summary, building a fibre network involves a significant amount of upfront investment, and there are economies of scope (and scale) in building a network to deliver both broadband and leased lines.<sup>346</sup> Using the network to generate as many different revenue streams as possible will help de-risk and improve the commercial business case for investment. Requiring

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<sup>343</sup> Among other things, Openreach will likely consider the impact on its leased lines pricing structure (e.g. offering dark fibre at a similar price to DFA in Area 3 will likely reduce its ability to price its active services above cost) and volumes (in view of the increasing rollout of competing networks by competing providers offering dark fibre services).

<sup>344</sup> Virgin Media response to the January 2020 Consultation, paragraphs 65-67.

<sup>345</sup> See Volume 4 Section 1, and Annex 12.

<sup>346</sup> Economies of scope exist if there are cost savings from deploying and providing multiple services jointly on a single network. Such savings typically arise from costs which are common across services and need to be incurred to service either or both, broadband and leased line customers. These economies of scope can arise from offering broadband and leased line services sharing common infrastructure, such as duct routes or fibre cables, thus the costs associated with deploying fibre in those sections are incurred only once, resulting in cost savings.

Openreach to offer dark fibre in Area 2 will undermine the ability of competing network operators to do this. Requiring Openreach to offer DFA in Area 2 would also affect the business case for telecoms providers focussed on leased lines.

- 6.39 Three argued that our market analysis overstates the availability of competing networks for mobile backhaul in Area 2, and therefore DFA should be available in parts of Area 2. In Volume 2 we explain why we consider that there is, or there is likely to be potential for, competitive network deployment across the whole of Area 2. Therefore, it would not be appropriate to impose DFA in parts of Area 2 as this could undermine the emergence of material and sustainable network competition in these areas.
- 6.40 We also disagree with the argument made by some stakeholders<sup>347</sup> that the risks that dark fibre poses to network competition in Area 2 could be addressed through the approach to pricing. We assume these stakeholders envisage the price being set at a level above BT's cost but where dark fibre is still more attractive than existing active products.<sup>348</sup> Requiring Openreach to provide dark fibre at such a price is inconsistent with our approach of maintaining existing access remedies to protect consumers in the short term, but letting competitive network investment drive the future competitive landscape.
- 6.41 TalkTalk, Vodafone, PAG and [redacted] [a confidential respondent] argued that introducing DFA in Area 2 would generate significant benefits over regulated wholesale active products, and that we had not demonstrated that the costs of imposing DFA in Area 2 (in terms of the impact on competitive network investment) outweighed these benefits. We explain above why introducing DFA in Area 2 would be inconsistent with our approach to remedies. We do not consider that it is necessary for us to undertake a formal, detailed, quantitative cost-benefit analysis of the kind proposed by stakeholders in this context.
- 6.42 We generally agree with Telefonica and Vodafone that telecoms operators are more likely to develop their capacity to consume the product if they can use it at scale. We consider that the size of Area 3 offers this required scale and note that [redacted].<sup>349</sup> We also anticipate that telecoms providers will develop such capacity to consume dark fibre not only from Openreach but also from competing network operators. Finally, as set out above, imposing DFA in Area 2 would undermine incentives to invest in competing networks. Therefore, we do not consider that this is a sufficient justification for extending the remedy to Area 2.
- 6.43 The Scottish Government said that the location of existing dark fibre is not necessarily well known and asked Ofcom to take a view on this.<sup>350</sup> We set out in this section our two dark fibre remedies, including where they will apply. However, we are not imposing a requirement on Openreach to provide information on the location of dark fibre. We note that while a number of providers supply dark fibre on a commercial basis, dark fibre provided by other providers falls outside the scope of our regulation.

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<sup>347</sup> PAG, TalkTalk, Three, UCKTA, Vodafone and [redacted] [a confidential respondent]. See summary of stakeholder responses to this section.

<sup>348</sup> Otherwise, we cannot see why they would want dark fibre instead of active products.

<sup>349</sup> [redacted].

<sup>350</sup> Scottish Government response to the January 2020 Consultation, page 3.

### Any adverse impacts of the remedy are proportionate to our overall aim

- 6.44 We have considered the potential risks associated with implementing a dark fibre remedy in the LL Access Area 3 market. Our assessment is set in Annex 9. Overall, we think any adverse impacts are proportionate to our overall aim, for the following reasons:
- The impact on competitive investment is low, given our decision to limit the remedy to Area 3.
  - We do not think there is evidence to suggest that a flattening of the bandwidth gradient will have an adverse impact on economic efficiency. In fact, we think the remedy is likely to place downward pressure on the price of VHB active circuits resulting in prices closer to cost, which would improve efficiency.
  - We have considered whether the DFA remedy will result in an under-recovery of costs for Openreach and consider the risks to be low.
  - We have considered whether the DFA remedy will result in rapid migration from leased lines, diverting engineering resource away from FTTP rollout in Area 3 and from meeting QoS requirements nationally. We consider the risks to be low.
  - We expect the DFA remedy to result in lower fault rates and potentially reduced costs associated with fault reduction and repair, rather than an increase in fault rates.

## Design of the Dark Fibre Access remedy

### Our proposals

- 6.45 In the January 2020 Consultation, we proposed a number of non-price design aspects of DFA, including requirements around:
- circuit configurations;
  - parity with active wholesale products, including an 86km route distance limit on DFA;
  - arrangements concerning provision of new infrastructure, including certain criteria to be applied to determine whether a particular adjustment to Openreach's network falls within the scope of its DFA obligation;
  - provisioning of single and dual fibre circuits;
  - processes for provisioning, repair and service migration; and
  - ancillary services, including a proposed requirement on Openreach to provide an ancillary facility enabling external network termination where there is no space and power in the local exchange.

### Stakeholder responses

- 6.46 Openreach commented on three aspects of the design of the DFA remedy: usage rules, network adjustments and ancillaries.
- 6.47 In relation to usage rules, Openreach said its understanding was that our proposed remedy would require it to provide DFA only from an exchange to an end-user site or between two end-user sites. It said that it planned to introduce contractual provisions to reasonably limit the use of DFA to the strict scope of the remedy, which would not require it to provide

connections to intermediate aggregation nodes, including telecoms providers' points of presence and street cabinets. Openreach said this will prevent aggregation of active services at a location between BT exchanges and the end user, which carries a significant risk of undermining its cost recovery (due to stranding of assets) and its FTTP roll out in Area 3. Openreach also said where DFA connects two end-user sites, both ends would need to be in Area 3.<sup>351</sup>

- 6.48 In relation to network adjustments, Openreach argued that the scope of the obligation should be limited in two ways. First, it said that network extensions should be out of the scope of our regulation and sought further guidance on the distinction between an adjustment and an extension. Second, it said that Ofcom's proposed criteria were insufficient for determining whether a particular network adjustment was proportionate, as they failed to take account of the opportunity cost in terms of engineering resources. It proposed adding a cost threshold of £5,000 for incremental network build (equating to about 50m of duct and fibre build) based on Ofcom's "indicative-dig-distance-cost-model-1". Openreach noted its proposals also apply to active leased lines services.<sup>352</sup>
- 6.49 In relation to ancillaries, Openreach disagreed with the proposal to make available a new facility enabling external network termination that can be used to connect dark fibre access to BT exchanges where space and power are not available. Openreach said this remedy is unnecessary because DFA would make it possible for a telecoms provider to order dark fibre to a local access node, even if that local access node is not a BT exchange. Openreach further said Ofcom's suggestion that DFA is directly spliced onto the ancillary facility undermines the current termination arrangements for DFX (and those previously agreed for the 2016 dark fibre remedy), which is for a dark fibre circuit to have a clear demarcation point at both ends of the service by terminating the service on a patch panel. Openreach considered that any industry requirement for such ancillary product can be addressed through the SoR process.<sup>353</sup>
- 6.50 BT supported Openreach's proposals for DFA usage rules and for how to differentiate network adjustments from network extensions.<sup>354</sup>
- 6.51 [§].<sup>355</sup>
- 6.52 TalkTalk made the following comments in relation to the design of the DFA remedy:
- Ofcom should remove the distance limit on DFA;
  - Ofcom should clarify that the approach to network adjustments for DFA should be the same as for leased lines except in cases where a difference can be justified; and
  - Openreach should provide a "soft cease" for DFA.<sup>356</sup>

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<sup>351</sup> Openreach response to the January 2020 Consultation, paragraphs 7.6, 7.124-7.143.

<sup>352</sup> Openreach response to the January 2020 Consultation, paragraphs 7.7, 7.150-7.184.

<sup>353</sup> Openreach response to the January 2020 Consultation, paragraphs 7.23, 7.83-7.91.

<sup>354</sup> BT Group response to the January 2020 Consultation, paragraphs 5.42-5.43 and 5.44-5.45.

<sup>355</sup> [§].

<sup>356</sup> TalkTalk response to the January 2020 Consultation, paragraph 7.177.

## Our reasoning and decisions

6.53 We have decided to specify the design of the DFA remedy to allow for the smooth adoption of the product in Area 3 across the five-year review period. In this section we discuss the non-price design aspects of the DFA remedy that will enable this. These are summarised in Table 6.2.

**Table 6.2: Summary of non-price design aspects of DFA**

Design aspect	Approach
<b>Circuit configurations</b>	Openreach is required to provide dark fibre terminating segments of the following types: <ul style="list-style-type: none"> <li>• access segments;</li> <li>• access segments including a main link between exchanges; and</li> <li>• end-to-end access segments without a main link.</li> </ul>
<b>Parity with active wholesale products</b>	DFA to be comparable to the passive optical elements of the corresponding active wholesale access products (EAD and EAD LA).
<b>Arrangements for provision of new infrastructure</b>	Openreach is required to lay new access and main link fibre segments subject to reasonable limits described below.
<b>Single and dual fibre circuits</b>	Openreach is required to provide single and dual fibre circuits.
<b>Processes for provisioning, repair &amp; service migration</b>	The provisioning, repair and service migration processes, developed by Openreach in collaboration with industry for the dark fibre remedy considered in the 2016 BCMR, are suitable for this remedy.
<b>Ancillary services (excluding ECCs)</b>	Accommodation, interconnection, Cablelink, TRCs and patch panels to be provided where reasonably necessary to use dark fibre.
<b>ECCs (Excess Construction Charges)</b>	ECCs apply to customer specific extensions to Openreach's network which are necessary to connect to an end-user site.

### Circuit configurations

6.54 To ensure that purchasers of dark fibre are not at a competitive disadvantage to purchasers of active wholesale services, we consider that telecoms providers should be able to obtain DFA circuits in similar configurations to Openreach's current range of active products (i.e. EAD and EAD LA products). To achieve this, we impose an obligation comparable to that imposed on Openreach for active access wholesale services, requiring Openreach to provide dark fibre terminating segments in the following configurations (also described in Annex 2):

- access segments;

- access segments including a main link between exchanges;<sup>357</sup> and
  - end-to-end access segments without a main link.<sup>358</sup>
- 6.55 The obligation to provide DFA depends on the postcode sector of the end-user site. Where an end-user site is located in Area 3, Openreach is required to provide a dark fibre circuit which terminates at that site, even if the other end of the circuit terminates in Area 2.
- 6.56 We disagree with Openreach that where DFA connects two end-user sites, both ends would need to be in Area 3. Our approach to remedies is to require Openreach to provide dark fibre where this will not undermine the deployment of competing networks. In Area 3, there is not, and there is unlikely to be potential for, material and sustainable competition to BT in the commercial deployment of competing networks. Requiring Openreach to provide DFA for such connections is unlikely to undermine competitive network deployment.
- 6.57 We anticipate that DFA will be predominantly used for leased lines sold to enterprise customers, and mobile and fixed access backhaul connections, in the LL Access Area 3 market. We recognise that it is difficult to predict all of the ways in which dark fibre could be used and we have sought not to place any usage restrictions on the remedy.
- 6.58 As discussed in Section 5, we will interpret the network access obligations in the LL Access markets not to require Openreach to provide active leased line circuits or dark fibre access circuits where they would be used to aggregate FTTP to multiple premises for the purposes of deploying a fibre access network.<sup>359</sup>
- 6.59 Openreach has said that it intends to retire some local exchanges and re-route traffic accordingly.<sup>360</sup> The first such exchange closures will not happen until after 2030 which is outside of this review period. However, we recognise that it will be important for industry to have early notice of any such closures and that suitable products are made available so that they can rearrange their network(s) accordingly. Openreach has committed to providing a substitute connectivity product in these situations.

*Fit with the dark fibre inter-exchange remedy*

- 6.60 As explained later in this section, we have also decided to impose a dark fibre remedy in the inter-exchange connectivity markets from BT Only exchanges with no competing networks close by.
- 6.61 We note the possibility that telecoms providers might attempt to use the DFA remedy to circumvent restrictions in the DFX remedy. Specifically, where a route between two exchanges does not qualify for the DFX remedy, a telecoms provider could in theory

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<sup>357</sup> Subject to the condition that at least one of the exchanges is BT Only with no competing networks close by. This is explained in more detail below.

<sup>358</sup> This is intended to mirror the Ethernet Wholesale End-to-End segment requirement proposed in the LL Access market.

<sup>359</sup> As set out in Section 5, Openreach has recently increased the price of leased lines used to aggregate FTTP to multiple premises. Openreach also announced that, if DFA is mandated, it will also apply usage policy changes to that product. See Openreach, 30 November 2020, [GEN102/20 Price changes for leased line circuits being used to aggregate FTTP to multiple premises](#), [accessed 11 March 2021].

<sup>360</sup> Openreach, 4 December 2020. [Future Handover Architecture and Exchange Footprint](#), [accessed 11 March 2021].

circumvent this by purchasing a dark fibre equivalent of an EAD access circuit (comprising a local access component from exchange to end user site, and a “main link” component from exchange to exchange) under the DFA remedy.

6.62 Allowing dark fibre to be used in this way is not the intention of the remedy, so we have decided that Openreach will only be required to provide dark fibre between two exchanges as part of the DFA remedy, if there is a requirement to provide dark fibre between those two exchanges as part of the DFX remedy.<sup>361</sup>

6.63 We consider such a scenario below and illustrate our approach.

6.64 As set out in Figure 6.3, Openreach currently provides active EAD access circuits which use a main link component to route between two BT+1 exchanges before terminating at an end-user site (in Area 3). Under our approach, Openreach would not be required to provide a dark fibre equivalent of this circuit (i.e. dark fibre access segment including a main link). This is because the main link component routes between two BT+1 exchanges, where dark fibre inter-exchange is unavailable.<sup>362</sup> In this scenario Openreach would only be required to provide dark fibre as shown in Figure 6.4.

Figure 6.3: Active

**EAD Access circuit configuration**

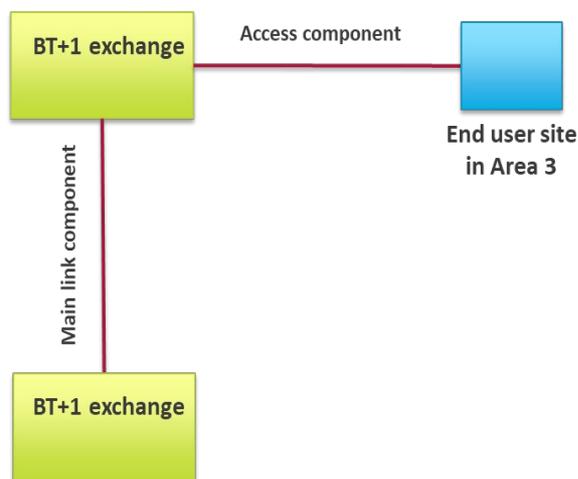
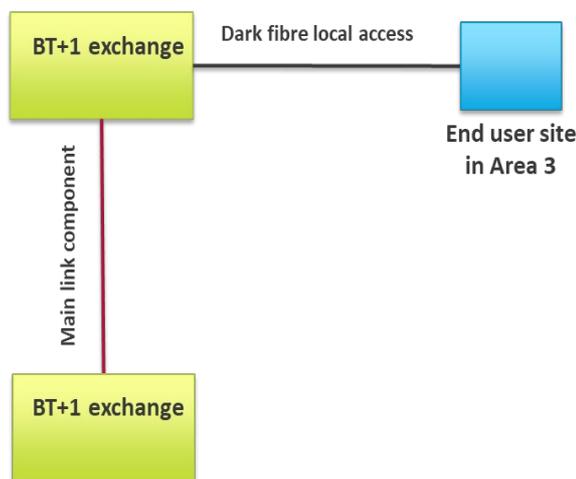


Figure 6.4: Dark Fibre

**Dark fibre Access circuit configuration**



6.65 We note that the instances where Openreach is not required to provide dark fibre between two exchanges within Area 3, as part of a dark fibre access circuit, are limited. Out of the 3,972 exchanges in Area 3, there are only 121 BT+1 and 21 BT+2 exchanges. Furthermore,

<sup>361</sup> By exception, as set out in the subsection on “ancillary services” below, under the DFA remedy, where there is no available space and power in the local exchange, Openreach is required to provide dark fibre to another exchange where there is space and power, even if the resulting dark fibre between the two exchanges is outside the scope of the DFX remedy.

<sup>362</sup> Note for presentational purposes we have used BT+1 exchanges in this example, however, the same is true for any combination of BT Only exchanges (where a competing PCO is within 100m), BT+1 exchanges and BT+2 exchanges (i.e. any route where our DFX remedy does not require BT to provide dark fibre).

where one of these 142 exchanges is connected to a BT Only exchange with no competing networks close by, dark fibre on that route would be available.

6.66 [363].<sup>363</sup>

6.67 [363]. As discussed above, the instances where Openreach is not required to provide dark fibre between two exchanges within Area 3, as part of a dark fibre access circuit, are likely to be limited. When they do occur, we expect telecoms providers to use connectivity by the competing network operators that are present in the non-BT Only exchange and thus support competition. We have also introduced an exception to this rule in cases where there is no space and power in the local exchange, as set out in the subsection on “ancillary services” below.

### Parity with active wholesale products

6.68 As a starting point, we believe that the technical, operational (provisioning and repair) and commercial aspects of Openreach’s current offer of EAD and EAD LA circuits, should be used as a benchmark for establishing the arrangements applicable to dark fibre.<sup>364</sup> Openreach’s EAD products are currently Openreach’s primary product for providing connectivity in the LL Access markets. They provide a range of connectivity options which fulfil telecoms providers’ access requirements and Openreach’s processes for providing those active products should therefore be capable of adaptation to include the provision of dark fibre.<sup>365</sup> We believe that by basing the dark fibre remedy directly on EAD products, telecoms providers will be able to replicate the types of connectivity they currently offer over active products.

6.69 In line with EAD products, we also include a distance limit for reasons of quality assurance and product safety. We have decided that our proposed route distance of up to 86km (applied for the safe use of EAD services) is appropriate.

6.70 We note that a radial distance limit of 45km is often used by Openreach as a proxy for route distances. We have not stipulated a radial distance limit in our regulation. While the 45km radial distance limit may be useful when considering systems developments and the initial filtering of dark fibre orders, Openreach must take steps to ensure dark fibre can be used for routes up to 86km route distance.

6.71 As noted above, TalkTalk said Ofcom should remove the distance limit on DFA, because any concerns about quality assurance and product safety are for the telecoms provider to address.<sup>366</sup> While we agree with TalkTalk that it is generally not for Ofcom to define the standards for quality assurance and product safety, parity with leased lines is also important. The distance limit will ensure that Openreach can deliver the product safely and

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<sup>363</sup> [363].

<sup>364</sup> We note that the 2019 BCMR also used EAD circuits as a benchmark for BT’s dark fibre inter-exchange product.

<sup>365</sup> However, we do acknowledge that the operation of BT’s dark fibre products will differ from Ethernet products in some respects.

<sup>366</sup> TalkTalk response to the January 2020 Consultation, paragraph 7.177.

with sufficient quality assurance, as existing training, safety and testing procedures will not need to change.

- 6.72 We have decided that the parity requirement will apply from the first stage of the implementation of the DFA remedy (17 August 2021) to the extent that the remedy is implemented. We discuss our decision to extend the deadline for full implementation of the DFA remedy further below.

#### **Arrangements concerning provision of new infrastructure**

- 6.73 As explained above, we have decided to impose a specific network access requirement on Openreach to provide DFA in the LL Access Area 3 market. Our power to impose such an obligation extends to requiring Openreach to make adjustments to its existing network to make dark fibre available, provided these are based on the problem identified, proportionate and justified in light of the requirements set out in Section 4 of the Act.<sup>367</sup>
- 6.74 In light of the requirement that the obligation be proportionate, and the fact that what is necessary is likely to depend on the specific circumstances of any case, we continue to believe it is not appropriate to set prescriptive rules in the SMP condition covering every circumstance. In our view, this would carry risk of regulatory failure. We therefore supplement the specific requirement to provide dark fibre access with the following guidance on when this obligation will apply in cases involving the provision of new fibre infrastructure.
- 6.75 As discussed in Section 4, network adjustments involve facilitating access to Openreach's existing access network. Openreach is not required to construct new network on behalf of other telecoms providers. This does not mean that it is never required to build or install new physical infrastructure or fibre assets. Openreach will not have existing connections to every end customer site within its network footprint as these are ordinarily built at the point of customer demand. Such connections fall within the scope of the obligation, subject to the criteria set out below. However, Openreach is not required to construct new physical or fibre infrastructure for competing telecoms providers outside its network footprint. This would amount to an extension of the network rather than making use of existing assets.
- 6.76 We consider that the following three criteria<sup>368</sup> should be applied cumulatively to determine whether a particular adjustment to Openreach's network falls within the scope of its DFA obligation:

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<sup>367</sup> [Judgment of 19 June 2014](#), TDC A/S v Teleklagenævnet C-556/12, EU:C:2014:2009, [accessed 11 March 2021].

<sup>368</sup> These criteria take into account the relevant factors set out in section 87(4) of the Act, in particular the first, second and sixth of the section 87(4) factors. With respect to the third and fourth factors set out in section 87(4) of the Act, our criteria are technologically and network design neutral and therefore take account of these factors. Section 87(4) also requires us to take into account the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed. As explained below, Openreach can apply ECCs for network adjustments which are specific to an individual customer. For network adjustments in common parts of Openreach's network, the costs are capitalised and recovered from connection and rental charges for multiple services over time (see Volume 4 Section 5).

- a) **Is the requested adjustment necessary?** This criterion considers whether an alternative option exists which would render the requested adjustment unnecessary, provided this alternative allows for a reasonably equivalent outcome for the telecoms provider compared to making an adjustment.
- b) **Is the requested adjustment feasible?** This criterion considers whether there are barriers that prevent Openreach from being able to make the required adjustment.
- c) **Does the requested adjustment improve efficiency?** This criterion considers whether the requested adjustment promotes efficiency and is therefore consistent with the rationale for requiring Openreach to provide dark fibre (i.e. to unlock the efficiencies from dark fibre).

6.77 We do not consider it appropriate, as Openreach suggested, to include a cost threshold as an additional criterion:

- a) Introducing a threshold risks undermining the effectiveness of the remedy if it is set too low. Openreach's intention to commercially assess whether to agree to requests for network adjustments above the cost threshold does not address this risk: given our SMP finding, it has the incentive and ability to refuse to supply access and thus restrict competition in the provision of products and services in the relevant downstream markets.
- b) As set out below, we expect the network access obligation to require network adjustments similar to those Openreach has been carrying out for many years in relation to the provision of active services. Therefore, we do not think any further clarity or certainty that a cost threshold could provide is necessary.
- c) We do not consider a threshold is necessary to ensure Openreach can recover its efficiently incurred costs. Openreach is able to recover the cost of DFA network adjustments, either through connection and rental charges (for network adjustments in shared parts of Openreach's network) or through Excess Construction Charges (for customer-specific network adjustments). Where they apply, ECCs also give telecoms providers incentives to minimise network adjustment costs.
- d) Finally, we do not agree with Openreach that the lack of a cost threshold will create a significant opportunity cost in terms of lower FTTP deployment. As discussed in Annex 9, we do not expect this impact to be material.

6.78 We have considered how the three criteria above might apply to likely scenarios which would require an adjustment in order to provide a dark fibre access segment. We consider scenarios where an adjustment would be required to provide dark fibre between two exchanges in the context of the dark fibre inter-exchange remedy later on in this section.

6.79 Given the ubiquity of Openreach's network, Openreach is likely to have duct and fibre along part, if not all, of the route from an exchange to a premises. However, the following two scenarios could arise along part of the route:

- Scenario 1: there is duct, but no fibre (either at all, or there is fibre but it is fully used).
- Scenario 2: there is no duct.

6.80 In both scenarios, we consider that the dark fibre access obligation will require Openreach to lay new fibre and/or duct in certain circumstances. The three criteria set out above should be used to identify those circumstances.

- a) In relation to the first criterion (necessity), the relevant factors may include: whether there is an alternative route that Openreach could provide dark fibre along; whether it would be possible to aggregate traffic onto fewer fibres in order to free up fibre capacity; and whether the requesting operator could lay its own fibre using the PIA remedy (subject to our guidance in relation to the third criterion set out below);
- b) In relation to the second criterion (feasibility), the relevant factors may include whether there are any technical, operational or legal barriers that prevent Openreach from laying the new fibre and/or duct (e.g. distance limits when installing fibre; traffic management or planning restrictions which make the laying of new fibre unfeasible);
- c) In relation to the third criterion (efficiency), the comparison should be between what Openreach would need to do to provide the requested dark fibre, and what a telecoms provider would need to do if it were to lay its own fibre using the PIA remedy.<sup>369</sup> Where there are differences which mean Openreach can provide dark fibre more efficiently (for example, it may be quicker, easier and/or cheaper), it would be required to lay new fibre under the dark fibre access obligation.

6.81 Under the third criterion (efficiency), in comparing what Openreach and a telecoms provider would need to do to provide fibre connectivity from an exchange to a premises, we note that DFA only requires Openreach to offer dark fibre access segments between an exchange and a premises; it does not require Openreach to offer intermediate segments of dark fibre where it is available.<sup>370</sup> If Openreach only offers the specific form of dark fibre we are requiring, this means the following for the two scenarios above:

- Scenario 1 (there is duct, but no fibre): other providers laying their own fibre using the PIA remedy would need to lay fibre over the entire route in order to provide connectivity from an exchange to a premises. Openreach would only need to lay fibre for sections of a route where fibre is unavailable.
- Scenario 2 (no duct): other providers laying their own fibre using the PIA remedy would need to install their own duct where there is no duct available, and then lay fibre over the entire route in order to provide connectivity from an exchange to a premises. Openreach would also need to install duct where there is no duct available, but would only need to lay fibre for sections of a route where fibre is unavailable.

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<sup>369</sup> In this comparison, Openreach should consider the incremental cost it faces in making the adjustment. For example, if Openreach would have carried out the work anyway, even if the telecoms provider had not requested the adjustment, the incremental cost will be lower.

<sup>370</sup> If such intermediate segments were available, a telecoms provider could in theory connect these to their own fibre where Openreach does not have fibre available.

- 6.82 In both scenarios, it is likely that Openreach can meet the request in a more efficient manner.<sup>371</sup>
- 6.83 To clarify our three criteria further, we expect that the same arrangements will apply for dark fibre access as for active leased lines (where Openreach provides a service to any location upon reasonable request, including locations that are not currently connected to its fibre network).<sup>372</sup> That is, we expect Openreach to provide DFA in the same circumstances as it would be required to provide an active leased line, unless Openreach can justify otherwise.
- 6.84 Given this, we consider Openreach's past behaviour to be useful indicator of where a network adjustment is likely to be required. In general, where Openreach has previously provided an active leased line connection, it is likely to be required to undertake any network adjustments necessary to provide the equivalent DFA connection.<sup>373</sup>
- 6.85 Where Openreach refuses to provide a connection (either an active leased line or DFA), but decides to provide that connection at a later stage, that may raise questions about whether Openreach had complied with its network access and no undue discrimination obligations. In such cases, we expect Openreach to be able to clearly demonstrate a change of circumstances, meaning that the provision of the connection is now necessary, feasible and most efficient.

#### Single and dual fibre circuits

- 6.86 To ensure that purchasers of dark fibre are not at a competitive disadvantage to purchasers of active wholesale services, we consider that telecoms providers should be able to obtain dark fibre circuits in similar configurations to Openreach's current range of active services. On this basis, we have decided to require Openreach to provide single or dual fibre circuits.

#### Provisioning, repair and service migration processes

- 6.87 We do not impose detailed obligations about the provisioning, repair and service migration process that Openreach has to follow. However, we consider that the processes that were developed for the dark fibre remedy imposed in the 2016 BCMR are suitable for the new DFA remedy. These processes were developed by Openreach in collaboration with telecoms providers during the implementation process for the dark fibre remedy imposed in the 2016 BCMR. The processes were specified in Openreach's dark fibre Reference Offer.

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<sup>371</sup> Even where Openreach is required to lay new fibre over an entire route between an exchange and a premises, Openreach benefits from existing economies of scale and scope in fibre deployment enabling it to install fibre at a lower cost than alternative network builders. For example, Openreach has the ability to gain efficiencies by aggregating fibres from multiple customers and across multiple services. As Openreach supply a much higher volume of circuits in Area 3 compared to alternative network operators, its ability to do this far exceeds the ability of other telecoms providers.

<sup>372</sup> Where the arrangements differ, telecoms providers could request an active circuit from Openreach, with the intention of migrating this to dark fibre at the end of the minimum contract period.

<sup>373</sup> Unless the three criteria above are not satisfied.

- 6.88 The provisioning processes for the dark fibre product that Openreach has developed are the same as those of the corresponding active products in most respects. The main differences are that Openreach would not provide active equipment but instead would undertake a precision test to measure and report circuit performance parameters.
- 6.89 The fault repair processes are necessarily different to the corresponding active products because telecoms providers, rather than Openreach, would be operating the network equipment which facilitates monitoring and fault diagnosis. Telecoms providers are therefore required to take greater responsibility for dispatch of Openreach technicians to repair fibre faults. We note that for the 2019 BCMR, Openreach has implemented a Right When Tested (RWT) ancillary charge for abortive fault repair visits above a threshold judged to be consistent with efficient remote fault diagnosis. We consider this approach to be appropriate.

### Ancillary services

- 6.90 In addition to this specific access obligation, a number of ancillary services are necessary to enable and support the provision of dark fibre access, including as a minimum: space and power, site access, interconnect, Cablelink, ECCs, TRCs, patch panels, and any other supporting services used for installation, maintenance, modification, and ceasing of this specific access service, including initial testing, right when tested (RWT) and cessation. We have decided that our specific access obligation should require Openreach to provide these ancillary services.
- 6.91 Below we discuss two ancillary services that are key to the provision of DFA and cases where there is no space and power in the local exchange.

### *Cessation*

- 6.92 We consider it necessary for Openreach to provide a separate cessation activity and associated charge which is applied to customers who cease use of dark fibre prior to the end of a contract. This dark fibre cessation charge is to allow Openreach to recover its costs as a result of requiring engineering call-outs. The approach to these dark fibre cease charges are set out in more detail in Volume 4 Section 5.
- 6.93 As noted above, TalkTalk said Openreach should provide a “soft cease”<sup>374</sup> for DFA. It said this “soft cease” could be provided through a contract mechanism whereby the telecoms provider commits to not use the DFA circuit once ceased.<sup>375</sup> At this time, we do not consider it appropriate to require Openreach to provide a remote cessation service for dark fibre in the same way it does for active leased lines. Openreach does not have remote control over the dark fibre circuit and so a soft cease solution would be more complex to implement in the same way as with other products in its portfolio. Telecoms providers are free to negotiate with Openreach a contractual solution as part of the DFA RO process.

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<sup>374</sup> A remote cessation service that does not require a visit from Openreach engineer.

<sup>375</sup> TalkTalk response to the January 2020 Consultation, paragraph 7.177.

### ECCs

- 6.94 As for active leased lines, ECCs apply to a dark fibre access circuit. ECCs are necessary to enable the provision of an access leased line requested by a telecoms provider and are specific to an individual customer at an end-user site. This generally equates to fibre between a nearby fibre flexibility point and the customer's premises.
- 6.95 For clarity, the ECC threshold applies in the same way as for active leased lines. This means charges for excess construction are only charged once the ECC threshold of £2,800 is reached, with the charges below the threshold being included (and spread across) the connection charge (see Volume 4 Section 5).

### *Cases where there is no space and power in the local exchange*

- 6.96 In the January 2020 Consultation, we also proposed to require Openreach to provide an ancillary facility enabling external network termination for dark fibre access where space and power within an exchange is not available, and where it is reasonable and feasible to do so.
- 6.97 We have decided that this requirement is not necessary. As with active leased lines, if a telecoms provider wishes to place a local access node in a local exchange for the purposes of connecting a DFA circuit to the rest of its network and no such space and power are available there, that telecoms provider can order DFA with a main link component to another exchange where space and power are available.
- 6.98 To ensure that in such circumstances telecoms providers are not restricted by the scope of the DFA remedy,<sup>376</sup> we have decided that Openreach is required to provide dark fibre between exchanges where there is no space and power in the local exchange. This is regardless of how the remote exchange is defined by Ofcom (i.e. BT Only, BT+1 or BT+2).
- 6.99 We note that our regulation is different for DFX where we have required Openreach to provide an ancillary facility enabling external network termination. We discuss this later in the section.

### Conclusion

- 6.100 We have decided that it is appropriate and proportionate to impose a DFA network access requirement in the LL Access Area 3 market as specified above to address our competition concerns in relation to this market. We do not consider that a different type of obligation or a more limited network access requirement would be sufficient to address the competition concerns we have identified.
- 6.101 To give effect to the above decisions, we set SMP Conditions 1 and 2 at Volume 7 requiring Openreach to provide dark fibre access in the LL Access Area 3 market. As set out in

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<sup>376</sup> See discussion under the subheading "Fit with the dark fibre inter-exchange remedy" above.

Section 3, Section 87(3) of the Act provides a basis to set these SMP conditions and we have taken into account the factors set out in section 87(4) of the Act.<sup>377</sup>

## Non-discrimination for the Dark Fibre Access remedy

6.102 Our decisions on non-discrimination which apply to all forms of network access are set out in Section 3. In summary, where Openreach supplies dark fibre to BT downstream or to non-BT customers, it must do so on an EOI basis. However, where dark fibre is used by Openreach to provide active circuits downstream, it will be exempt from the EOI requirement. In such cases the no undue discrimination requirement applies.

## Pricing of the Dark Fibre Access remedy

### Our proposals

6.103 In the January 2020 Consultation, we proposed to impose a cost-based charge control on the provision of DFA.

### Stakeholder responses

6.104 Some stakeholders agreed with our proposal to regulate the DFA price at BT's cost.<sup>378</sup>

6.105 CityFibre and a number of other altnets<sup>379</sup> argued the price of DFA should be set to reflect the costs of a reasonably efficient operator to support investment in fibre networks by altnets.<sup>380</sup> Axione said the price of DFA should be set at "a much higher level" to allow altnets to compete with Openreach.<sup>381</sup>

6.106 TalkTalk agreed that DFA pricing should be cost-based in Area 3. It said Ofcom should clarify that the Right When Tested (RWT) charge should reflect the costs incurred.<sup>382</sup>

6.107 Some stakeholders commented on how the DFA charge control is modelled and, in particular, what costs are taken into account. We discuss these comments in Annex 17.

### Our reasoning and decisions

6.108 We find BT to have SMP in the LL Access Area 3 market and consider that BT has the incentive and the ability to fix and maintain DFA prices at an excessively high level so as to

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<sup>377</sup> Our commentary on the section 87(4) factors set out in Section 3 also applies, where relevant, to the specific network access remedies.

<sup>378</sup> SSE, answer to Volume 4, Question 2.4; Three, paragraph 12.1-12.3; and [3<] [a confidential respondent], page 7, in their responses to the January 2020 Consultation; and [KCOM](#) response to the November 2020 Consultation, paragraph 1.6.

<sup>379</sup> [GOS Consulting](#) (on behalf of Community Fibre, County Broadband, euNetworks, Fibrus, INCA, Jurassic Fibre, Swish Fibre, Wight Fibre and Zayo) response to the November 2020 Consultation.

<sup>380</sup> CityFibre response to the January 2020 Consultation, paragraphs 5.116 and 6.118-6.123; [CityFibre](#) response to the November 2020 Consultation, paragraph 4.3; [GOS Consulting](#) (on behalf of Community Fibre, County Broadband, euNetworks, Fibrus, INCA, Jurassic Fibre, Swish Fibre, Wight Fibre and Zayo) response to the November 2020 Consultation, paragraph 140.

<sup>381</sup> Axione response to the January 2020 Consultation, paragraph 5.48.

<sup>382</sup> TalkTalk response to the January 2020 Consultation, paragraphs 7.172 and 7.177.

have adverse consequences for end-users. Excessive prices at the wholesale level could make it difficult for other providers to compete at the retail level with BT. Excessively high wholesale charges are also likely to result in high retail prices, i.e. consumers would be paying more for a service than they should expect if wholesale prices were constrained by effective competition.

- 6.109 We have decided to impose a charge control on the provision of dark fibre access to address this risk of excessive pricing. As set out in Section 1, our approach to remedies in Area 3 is to promote investment in gigabit-capable networks by Openreach, while also seeking to promote retail competition based on access to Openreach's networks and protect consumers. We do this by promoting competition through providing network access to other telecoms providers, and DFA is our primary access remedy in the LL Access Area 3 market.
- 6.110 In principle, a charge control could be set using either a cost-based or active-minus approach. By cost-based we mean a charge control that is set with reference to the underlying costs of providing an access circuit. By active-minus we mean a charge control that is set with reference to the price of an active circuit, adjusted to reflect differences in the cost of providing a dark fibre access circuit.
- 6.111 We have decided to set a cost-based charge control for the DFA remedy. We consider that a cost-based control achieves our objective in the context of DFA in Area 3. Cost-based prices for DFA will allow telecoms providers to compete more effectively with BT downstream while maintaining appropriate investment incentives on Openreach. We believe an active-minus charge control would be inappropriate as it could result in a higher DFA price which would limit the take-up and associated benefits of the remedy.<sup>383</sup>
- 6.112 We have also decided to set the charges based on BT's costs. We disagree with CityFibre that the price of DFA should be based on the costs of a Reasonably Efficient Operator (REO) to support investment in fibre networks by altnets. For the reasons set out above, we think the risk of DFA undermining competitive network investment in Area 3 is small. By imposing DFA at BT's cost we ensure that telecoms providers wishing to compete with BT downstream can do so on the best possible terms.
- 6.113 As discussed in Volume 4 Section 2, we have decided that the regulation of existing active products is maintained on a safeguard basis (i.e. inflation adjusted prices from 2021 levels) as we recognise that industry will take time to adjust as services transition to dark fibre. Accordingly, the dark fibre price is lower than active circuit prices, particularly for VHB services.
- 6.114 We generally agree with TalkTalk that the RWT should be priced to reflect the cost incurred. As set out in Volume 4 Section 5 we have decided to impose cost-based charge controls for all dark fibre ancillaries. Following the charge controls of the 2018 WLA and the 2019 PIMR and BCMR, we consider that the prices of ancillary services in aggregate are

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<sup>383</sup> As the dark fibre remedy will only be available in Area 3, we also consider that a price premium to incentivise competitive investment would be inappropriate.

already close to cost and that subsequent changes in cost are likely to track inflation relatively closely.

- 6.115 In its response to the November 2020 Consultation, Vodafone said that when migrating from Ethernet to DFA telecoms providers should not be charged for new patch panels because Ethernet services will already be using terminating equipment.<sup>384</sup> We disagree. To provide dark fibre (DFA and DFX) Openreach needs to have a handover point and the terminating equipment of Ethernet services is not suitable for this.
- 6.116 However, we note a new patch panel may not be required for each additional dark fibre (DFA or DFX) connection and our dark fibre charge control sets a price for patch panels only where they are necessary to enable and support the network access obligation. Where an operator is already renting a dark fibre patch panel from Openreach, it will not face any further patch panel charges for additional dark fibre circuits if it can use the existing patch panel.
- 6.117 Our decisions for setting the charge control on dark fibre, including the choice of cost standard, estimation of relevant costs, pricing of ancillary services, and satisfaction of the applicable pricing legal tests, are discussed in detail in Annex 17 and Volume 4.

## Reference Offer for the Dark Fibre Access remedy

### Our proposals

- 6.118 In the January 2020 Consultation, we proposed that Openreach should be required to publish a Reference Offer (RO) for DFA, agreed as part of industry negotiations, taking into account the proposed general requirements in Section 3 of that consultation. We also proposed that the RO for dark fibre must set out an explanation of any differences between the provision of dark fibre services and the same associated services that apply to the relevant active reference product.

### Stakeholder responses

- 6.119 Stakeholders did not raise any issues with our proposals around the DFA RO.
- 6.120 BT and Openreach commented on the timeline for inclusion in the DFA RO of various elements, such as SLAs and SLGs. We discuss these below.

### Our reasoning and decisions

- 6.121 We have decided to require BT to publish a RO for dark fibre access in the LL Access Area 3 market, taking into account the proposed general requirements in Section 3.
- 6.122 Before publishing the DFA RO, Openreach must work with industry to agree and finalise SLAs and SLGs for the completion of the provision of service and fault repair times as part of industry negotiations regarding product specification within this RO. We note that

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<sup>384</sup> [Vodafone](#) response to the November 2020 Consultation, paragraphs 32-36.

following the publication of the 2016 BCMR, industry worked with BT for 15 months to develop the technical and operational aspects of the dark fibre product. This included a dark fibre RO, which BT published in December 2016. We expect the RO published for dark fibre access in the LL Access Area 3 market will be very similar to what was previously published for the 2016 BCMR.<sup>385</sup>

- 6.123 The DFA RO must set out an explanation of any differences between the provision of DFA services and the same associated services that apply to the relevant active reference product. This is intended to offer transparency within the RO and help achieve parity between dark fibre access and wholesale active services. Such transparency in the RO will also assist the monitoring of anti-competitive behaviour and provide visibility to the terms and conditions on which other providers will purchase dark fibre services.
- 6.124 To give effect to this decision, we set SMP Condition 7 at Volume 7 requiring BT to provide a reference offer for dark fibre access in the LL Access Area 3 market. As set out in Section 3, sections 87(6)(c) to (e) of the Act authorise the setting of SMP services conditions in relation to the Reference Offer.

## Quality of Service for the Dark Fibre Access remedy

- 6.125 Our decisions on DFA QoS are set out in Volume 5 Section 4. In summary, we have decided to set QoS standards for the provisioning of DFA circuits at the same levels as those for active Ethernet circuits, and QoS standards for the repair of DFA by reference to the SLA, as is the case for active Ethernet circuits. When assessing compliance against the provisioning and repair QoS standards, we have decided to aggregate DFA and Ethernet performance data. We also require Openreach to report KPI data for DFA separately from its Ethernet circuits.

## Implementation of the Dark Fibre Access remedy

### Our proposals

- 6.126 In the January 2020 Consultation, we proposed to require Openreach to launch the DFA product, including the publication of the RO, within one month of the publication of our statement.
- 6.127 Openreach was the only stakeholder to provide substantial comments on the proposed DFA implementation timeframe. It said our proposals were not realistic given the system development and training required. It said 1 October 2021 is a sensible date for a soft launch and 1 June 2022 for full product launch. It noted DFA implementation could be further impacted by the Covid-19 pandemic.<sup>386</sup>
- 6.128 In light of these comments, we engaged with Openreach to understand better the steps involved in DFA implementation and explore ways in which the DFA remedy could be

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<sup>385</sup> We set out the specific requirements for the RO at Condition 7 in Volume 7.

<sup>386</sup> Openreach response to the January 2020 Consultation, paragraphs 1.23(c)(iii), 7.8-7.9 and 7.185-7.251.

implemented as soon as possible.<sup>387</sup> Following this engagement, Openreach changed its original position and provided a revised implementation plan for DFA with an expedited soft launch on 17 August 2021.

- 6.129 Based on this new information, in our November 2020 Consultation, we proposed a longer implementation period for DFA than we had originally proposed, with a soft launch (automation of provision and repair<sup>388</sup>) by 17 August 2021 and a full launch (automation of all non-essential functionality) by 1 June 2022. We also proposed that the QoS reporting requirements apply from 1 April 2021 and the QoS standards from 1 June 2022.

## Stakeholder responses

- 6.130 Most stakeholders that commented had no objections to the proposed changes to the DFA implementation timetable.<sup>389</sup>
- 6.131 Openreach agreed with Ofcom's proposed DFA implementation timeframe and said work on implementation has already started. It also set out its plan for industry engagement after publication of the WFTMR statement. Openreach noted that under its revised implementation plan DFA product journey will be temporary limited at launch (incomplete testing, no modify capability and manual repair until 1 October 2021) and that it plans to do a phased operational rollout so that the product is ready to be consumed by industry at scale by June 2022.<sup>390</sup>
- 6.132 TalkTalk and Vodafone argued that DFA implementation should be possible within six months. They noted Openreach's experience with the 2016 dark fibre access and the 2019 dark fibre inter-exchange products. They also noted the shorter implementation periods Openreach achieved for the regulated 2019 DFX product and the commercial OSA Filter Connect product.<sup>391</sup>
- 6.133 PAG and TalkTalk said that telecoms providers cannot offer SLAs/SLGs to end-users without corresponding SLAs/SLGs from Openreach and requested that SLAs/SLGs and QoS obligations should apply from the soft launch. TalkTalk acknowledged that some non-essential functionality and the corresponding SLAs/SLGs and QoS components may take longer.<sup>392</sup>
- 6.134 PAG was concerned with the level of transparency in Ofcom's proposals and the lack of assurances that Openreach is not going to push back implementation even further.<sup>393</sup>

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<sup>387</sup> This includes meetings between Ofcom and Openreach regarding DFA implementation dated 30 July 2020 and 22 September 2020, and Openreach responses to the January 2020 Consultation and the November 2020 Consultation.

<sup>388</sup> We proposed that DFA repair is available as a manual process from 17 August 2021 and as an automated process from October 2021.

<sup>389</sup> [BUUK](#), page 1; GOS Consulting (on behalf of Community Fibre, County Broadband, euNetworks, Fibrus, INCA, Jurassic Fibre, Swish Fibre, Wight Fibre and Zayo), paragraph 141; [KCOM](#), page 2; SSE, Q5.1; [Truespeed](#), Q5.1, page 6; in their responses to the November 2020 Consultation.

<sup>390</sup> [Openreach](#) response to the November 2020 Consultation, paragraphs 4.1-4.27.

<sup>391</sup> TalkTalk, paragraphs 4.1-4.6; and Vodafone, paragraphs 37-39, in their responses to the November 2020 Consultation.

<sup>392</sup> [PAG](#), paragraph 4.2; and TalkTalk, paragraph 4.3, in their responses to the November 2020 Consultation.

<sup>393</sup> [PAG](#) response to the November 2020 Consultation, paragraph 4.1.

## Our reasoning and decisions

6.135 We have decided to impose on Openreach certain obligations that ensure the timely implementation of DFA in the LL Access Area 3 market, as set out in Table 6.5.

**Table 6.5: Summary of DFA implementation obligations**

	17 August 2021 – soft launch	1 June 2022 – full launch
<b>Functionality</b>	Openreach to automate DFA provision by 17 August 2021 and DFA repair by 1 October 2021. <sup>394</sup>	Openreach to automate all other DFA functionality (e.g. novation <sup>395</sup> and billing) by 1 June 2022.
<b>Reference Offer</b>	Openreach to publish DFA RO (excluding SLAs and SLGs) agreed as part of industry negotiations.	Openreach to publish DFA RO (including SLAs and SLGs) agreed as part of industry negotiations.
<b>Parity with active wholesale products</b>	DFA, to the extent implemented, to be comparable to the optical elements of the corresponding active wholesale products (i.e. EAD and EAD LA).	DFA to be comparable to the optical elements of the corresponding active wholesale products (i.e. EAD and EAD LA).
<b>Quality of Service<sup>396</sup></b>	QoS reporting requirements apply from 1 April 2021.	QoS standards apply. Compliance will begin from 1 June 2022.

6.136 For the below reasons, we consider that these DFA implementation obligations are appropriate and proportionate to support the DFA network access obligation, and in relation to BT's market power in the LL Access Area 3 market.

6.137 As set out in Section 1, our primary access remedy in the LL Access Area 3 market is dark fibre. That is why our aim when designing the DFA implementation obligations is to enable telecoms providers to consume DFA at scale as soon as reasonably possible.

6.138 To understand the steps involved in DFA implementation and explore ways in which the DFA remedy could be quickly implemented we had several meetings with Openreach, which led to our revised November 2020 Consultation proposals for DFA implementation. Based on our engagement with Openreach, we understand that there are three main areas of work for DFA implementation:

<sup>394</sup> DFA repair to be available as a manual process between 17 August 2021 and 1 October 2021.

<sup>395</sup> The novation service enables communications providers already established as Openreach customers to request the transfer of specific product contracts from one legal entity to another. This facility can be of use in business change scenarios such as merger and acquisitions, sale or corporate re-structuring. See [Openreach price list](#), [accessed 11 March 2021].

<sup>396</sup> We explain our approach to dark fibre QoS standards in Section 7.

- **System development:** Openreach said DFA would require seven systems releases in total to deliver a complete solution, four of which will be dedicated to deliver the essential features of the product (provide and repair).<sup>397</sup>
- **Contracts:** Openreach said it would need to negotiate and agree with industry a RO and product documentation to support the DFA remedy.<sup>398</sup>
- **Operational readiness:** Openreach said it would need to implement a national training programme for its desk and field teams. It said training would need to be staggered and targeted so that it does not disrupt or have a negative impact on other products, such as EAD or FTTP.<sup>399</sup>

6.139 As part of our engagement, Openreach provided an expedited implementation plan for the DFA product, which it confirmed in its response to the November 2020 Consultation.<sup>400</sup> This is set out in Figure 6.6 below.

**Figure 6.6: Openreach proposed expedited DFA implementation timeline**



*Note: DFA repair to be available as a manual process from 17 August 2021 and automated by 1 October 2021.*

*Source: Openreach response to the November 2020 Consultation.*

6.140 We believe that the timetable set out in Figure 6.6 is appropriate and proportionate in that it ensures the quickest implementation (4.5 + 9.5 months) of an automated DFA product<sup>401</sup> that can be used at scale while avoiding a significant disruption of Openreach’s operations. A quicker implementation of an automated DFA product is likely to have a knock on impact on critical developments for other important products, such as PIA and FTTP.<sup>402</sup> And, while manual processes could also be used to expedite the launch of the DFA product, this is likely to significantly delay its scale availability.<sup>403</sup>

6.141 We do not consider that DFA implementation is possible within 6 months, as TalkTalk and Vodafone have argued. First, Openreach explained that it cannot reuse the dark fibre access product it developed in 2016 because, in launching the DFX product, it “overwrote”

<sup>397</sup> Openreach response to the January 2020 Consultation, paragraphs 7.205-7.217.

<sup>398</sup> Openreach response to the January 2020 Consultation, paragraphs 7.220-7.225.

<sup>399</sup> Openreach response to the January 2020 Consultation, paragraphs 7.227-7.236.

<sup>400</sup> Openreach also said this programme of work has been agreed and prioritised within Openreach by the relevant product and Chief Technology Information Office. See Openreach response to November 2020 Consultation, paragraph 4.4.

<sup>401</sup> DFA repair will be available as a manual process from 17 August 2021 and as an automated process from October 2021.

<sup>402</sup> Openreach response to the January 2020 Consultation, paragraphs 7.214-7.217; 7.236 and 7.237; Openreach response dated 26 February 2021 to s. 135 notice dated 16 February 2021, question 5, page 7.

<sup>403</sup> Openreach response dated 26 February 2021 to s. 135 notice dated 16 February 2021, question 6, page 7. We discuss this in further detail in paragraphs 5.12 to 5.16 of the November 2020 Consultation.

the code base that had been developed for the 2016 dark fibre access product. Openreach also said it has been over four years since the 2016 dark fibre access design was completed and that in the intervening time period numerous system and product enhancements have been implemented for the EAD product journey.<sup>404</sup> Second, Openreach explained that the DFA and DFX remedies have different processes and procedures. One consequence of this is that Openreach would not be able to reuse the previous DFX training.<sup>405</sup> Finally, we do not consider it appropriate to use the DFX and OSA Filter Connect products as benchmarks. The scope of the DFX remedy is narrower and the product has no access components which tend to be more complex to implement. In relation to OSA Filter Connect, Openreach has informed us that this product was not designed to be consumed at the level of scale as DFA and its implementation was done on a similar timeframe (over 11 months).<sup>406</sup>

- 6.142 We acknowledge Openreach's comments regarding the temporary limitations on the DFA product at launch. It is important that Openreach and telecoms providers can start the testing and scaling of DFA as soon as possible. Therefore, we consider that the soft launch should not be delayed any further than 17 August 2021.
- 6.143 We have decided that the QoS reporting requirements will apply from 1 April 2021. Openreach would not have any QoS data to report before it launches the DFA product. This is to ensure that Ofcom and stakeholders can begin monitoring the DFA product as soon as it becomes available, in case that happens before 17 August 2021.
- 6.144 We agree with PAG and TalkTalk that SLAs, SLGs and QoS standards will be important for the DFA product. However, we continue to believe that it would not be appropriate to introduce these requirements before the full launch of the product on 1 June 2022. This is to allow Openreach to fully implement and automate the DFA product before it is required to comply with any SLAs or QoS standards.
- 6.145 In order to avoid delays in implementation, we will actively monitor progress. This is consistent with our approach to the revision of the PIA remedy in 2018 and the introduction of the DFX remedy in 2019. We also note that if Openreach does not comply with its DFA implementation obligations, this may constitute a breach of the obligations that we are imposing.

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<sup>404</sup> Openreach response to the January 2020 Consultation, paragraphs 7.200-7.204. Openreach response dated 26 February 2021 to s. 135 notice dated 16 February 2021, questions 7-8, page 8.

<sup>405</sup> Openreach response to the January 2020 Consultation, paragraphs 7.229; and Openreach response to the November 2020 Consultation, paragraph 4.24(c). Openreach response dated 26 February 2021 to s. 135 notice dated 16 February 2021, questions 9, page 9.

<sup>406</sup> Openreach response dated 26 February 2021 to s. 135 notice dated 16 February 2021, question 4, pages 5-6.

## Aim and effect of the Dark Fibre Inter-Exchange remedy

### Our proposals

6.146 In the January 2020 Consultation, we proposed to maintain the requirement on Openreach to provide access to dark fibre for the supply of inter-exchange connectivity from BT Only exchanges where the nearest competing PCO network is more than 100m away.

### Stakeholder responses

6.147 Stakeholders did not raise any issues with the proposal to maintain the DFX remedy.

6.148 Gigaclear agreed with the proposed DFX remedy. It said the remedy promotes competition in the provision of connectivity between exchanges, enables infrastructure build in marginal access areas, and drives more efficient delivery within state aid interventions.<sup>407</sup>

6.149 Three agreed with the proposed DFX remedy. However, it said the remedy should be extended to BT+1 exchanges, for the reasons set out in its response to the 2019 BCMR.<sup>408</sup> In that response, Three argued that BT has SMP in the provision of inter-exchange connectivity from all BT exchanges and so the DFX remedy should apply to all BT exchanges. In the same submission, Three also indicated that the DFX remedy had limited usefulness in its current form, though it identified a few instances of potential orders in the short term, and more in the medium term.<sup>409</sup>

### Our reasoning and decisions

#### A dark fibre remedy for inter-exchange connectivity is appropriate and proportionate

6.150 Given our conclusion that BT has SMP in the provision of inter-exchange connectivity at each BT Only exchange in the UK, we consider that BT has the incentive and ability to refuse to supply access and thus restrict competition in the provision of products and services in the relevant downstream markets. To address this, we have decided to re-impose the requirement on Openreach to provide specific network access in the form of access to dark fibre.

6.151 The DFX remedy significantly reduces costs and, in areas where investment is unlikely, is a more effective way of addressing our competition concerns than active remedies alone. It therefore promotes competition, not only in the provision of connectivity between exchanges where there are no or insufficient competitive networks, but also by acting as an enabler for infrastructure build in marginal areas, as backhaul and core costs are a consideration when building new access networks.

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<sup>407</sup> Gigaclear response to the January 2020 Consultation, paragraphs 110 and 111.

<sup>408</sup> Three response to the January 2020 Consultation, paragraph 12.12.

<sup>409</sup> [Three](#) response to the 2018 BCMR Consultation, paragraphs 4.1-4.18.

6.152 DFX provides users with a more flexible input to downstream services, leading to the same advantages as the ones discussed above for dark fibre access.<sup>410</sup> Given these advantages, we expect a material volume of DFX circuits to be purchased over the review period.

**The remedy continues to be limited to BT Only exchanges with no competing networks close by**

6.153 In the 2019 BCMR Statement, we only required the DFX remedy to apply at BT Only exchanges with no competing networks close by.<sup>411</sup> This reflected our consideration of the potential impact on investment of a DFX remedy at BT Only exchanges where competing infrastructure is close. We have decided to maintain this requirement, including its scope.

6.154 As DFX is only available from BT Only exchanges without close competing infrastructure, there will be no impact on existing investment undertaken by other PCOs. Nonetheless, we note it could still have an impact on future investment by PCOs with network further from an exchange, as it would lead to lower prices for services between BT exchanges and thereby deter competing telecoms providers from:

- connecting to a BT exchange to provide backhaul services; and/or
- investing in competing routes to backhaul traffic.

6.155 We consider that the incentives to connect to a BT Only exchange are strongest where competing networks are close and where there is material demand for backhaul. Accordingly, applying a distance-based exclusion ensures that dark fibre is only made available at exchanges where there are no competing PCO networks close by and investment is unlikely.

6.156 Currently, this approach means that Openreach is required to make DFX available at 3,652 exchanges out of a total of 5,569 exchanges.

6.157 For the reasons set out above, we consider that the DFX remedy we are imposing is appropriate and proportionate. We believe that the potential adverse impacts of DFX (which are similar to those discussed above for dark fibre access) are proportionate to our overall aim.<sup>412</sup>

6.158 Following the update of our market analysis (as discussed in Volume 2 Section 8 and Annex 6), we have reclassified some BT exchanges, including a reduction (of 51) in the number of BT Only exchanges with no competing networks close by. To avoid service interruption, we have decided to require Openreach to continue the supply of DFX from deregulated exchanges that have been ordered or are already live on 18 March 2021, for a transitional period of one year until 31 March 2022. Otherwise, Openreach would, subject to its contractual obligations with telecoms providers, be able to terminate certain DFX circuits that are currently being used for inter-exchange connectivity from those exchanges. We

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<sup>410</sup> See Annex 9 for a more detailed discussion of the benefits and adverse impacts of dark fibre.

<sup>411</sup> By exchanges where there is no competing network close by, we mean BT Only exchanges which are not within 100m of a competing Principal Core Operator (PCO) network. We defined PCOs as telecoms providers that own their own infrastructure, have a substantial footprint and have the capacity to offer a wholesale inter-exchange connectivity service to other telecoms providers.

<sup>412</sup> See Annex 9 for a more detailed discussion of the benefits and adverse impacts of dark fibre.

consider that this transitional arrangement is therefore necessary to ensure sustainable transition for telecoms providers from Openreach's DFX to alternative services. We consider that there is a low risk of stranded assets for the transitioning telecoms providers because, among other reasons, active equipment would represent a fraction of the overall cost for a circuit and could be reused for other passive or active circuits.

## Design of the Dark Fibre Inter-exchange remedy

### Our proposals

6.159 In the January 2020 Consultation, we proposed a number of non-price design aspects of DFX, including requirements around circuit configurations, parity with active wholesale products, arrangements concerning provision of new infrastructure, provisioning of single and dual fibre circuits, processes for provisioning, repair and service migration, and ancillary services (including a proposed ancillary facility enabling external network termination where there is no space and power in the local exchange).

### Stakeholder responses

6.160 In relation to ancillaries, Openreach argued that should there be a specific industry requirement for access to DFX at an exchange where space and power is exhausted, then this issue is better served via the existing SoR process than a specific requirement to provide an ancillary facility enabling external network termination. Taking this approach would allow Openreach and industry to frame the issue properly and investigate a feasible solution for all products using existing processes that were created to evaluate such requirements.<sup>413</sup>

6.161 Gigaclear said the remedy is not fit for purpose and highlighted two usage restrictions in the existing DFX RO,<sup>414</sup> which it argued render the remedy ineffective:

- the DFX RO requires that the DFX user has presence in the BT Only exchange. According to Gigaclear, this requirement could mean that a telecoms provider pays for space and power in an exchange before carrying out a survey that finds the circuit is not viable; and
- the DFX RO prohibits the use of DFX for the purpose of building or extending a core network, or where the intent is to replicate a core network. According to Gigaclear, this requirement may be interpreted as prohibiting connections to any equipment that is not directly serving access services.<sup>415</sup>

6.162 Gigaclear supported the proposed ancillary facility enabling external network termination where there is no space and power in the local exchange.<sup>416</sup>

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<sup>413</sup> Openreach response to the January 2020 Consultation, paragraphs 7.83-7.91.

<sup>414</sup> Sections 2.2 and 2.4 of Appendix 1, [Schedule 2, DFX RO](#), [accessed 11 March 2021].

<sup>415</sup> Gigaclear response to the January 2020 Consultation, Annex 2, page 2.

<sup>416</sup> Gigaclear response to the January 2020 Consultation, paragraphs 113-114.

## Our reasoning and decisions

6.163 While the design and supporting rationale for many of the aspects of the DFX remedy are the same for the DFA remedy, there are some differences. We summarise in Table 6.7 the non-price design aspects of DFX and indicate how these compare to the DFA remedy. We then go on to discuss certain aspects in more detail.

**Table 6.7: Summary of 2019 BCMR non-price design aspects of DFX**

Design aspect	Equivalent to DFA?	Approach
Circuit configurations	No	Openreach is required to provide dark fibre backhaul segments from BT Only exchanges with no competing networks close by. Access to BT Only exchanges for inter-exchange connectivity is required where the requesting telecoms provider is present (or intends to become present) for the purpose of providing wholesale access to businesses from that exchange.
Parity with active wholesale products	Yes <sup>417</sup>	DFX must be comparable to the optical elements of the corresponding active wholesale inter-exchange connectivity products (EAD). Dark fibre to have a route distance limit of 86km.
Arrangements for provision of new infrastructure	No <sup>418</sup>	Openreach is required to lay new main link fibre segments subject to reasonable limits described below.
Single and dual fibre circuits	Yes <sup>419</sup>	BT is required to provide single and dual fibre circuits.
Provisioning, repair & service migration processes	No	The provisioning, repair and service migration processes, developed for the DFX remedy imposed in the 2019 BCMR, are suitable for this remedy.
Ancillary services, excluding ECCs	No <sup>420</sup>	Openreach is required to provide accommodation, interconnection, TRCs and patch panels where reasonably necessary to use dark fibre. This includes ancillary facility enabling external network termination outside BT exchanges with no space and power.
ECCs	No	Not applicable.

<sup>417</sup> See sub-section 'parity with active wholesale products' for the DFA remedy for more detail and supporting rationale.

<sup>418</sup> Note that the three criteria we use to assess whether a particular adjustment to BT's network falls within the scope of its obligation are the same for DFA and DFX. However, the application of these criteria is specific to each remedy.

<sup>419</sup> See sub-section 'Single and dual fibre circuits' for the DFA remedy for more detail and supporting rationale.

<sup>420</sup> See sub-section 'Ancillary services' for the DFA remedy for more detail and supporting rationale. The requirement to provide DFA does not include a requirement to provide an ancillary facility enabling external network termination.

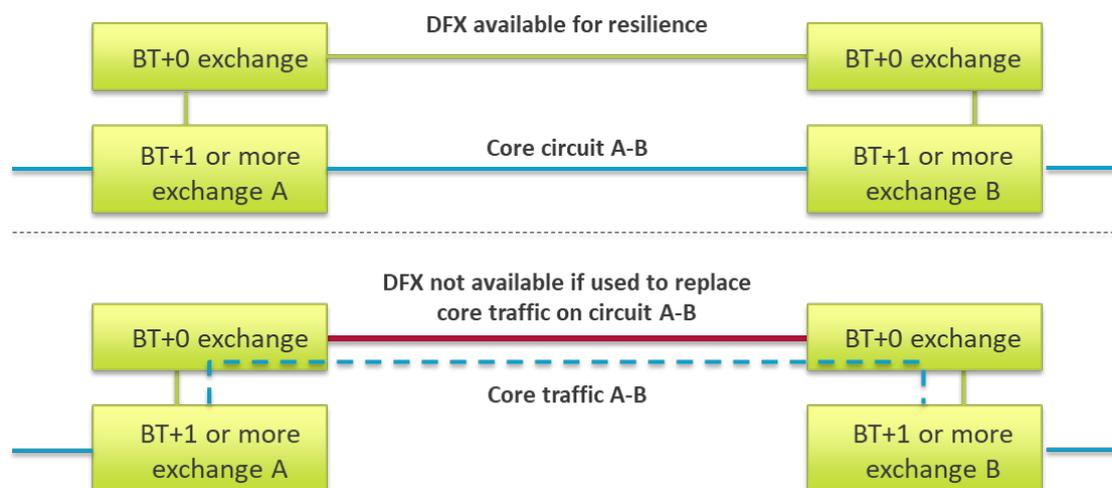
### Circuit configurations

- 6.164 To ensure that purchasers of DFX are not at a competitive disadvantage to purchasers of active wholesale services, telecoms providers should be able to obtain DFX circuits in similar configurations to Openreach's current range of active services.
- 6.165 Openreach is therefore required to provide DFX where the requesting telecoms provider is present (or intends to become present) for the purpose of providing and/or aggregating wholesale access services<sup>421</sup> at a BT Only exchange where the DFX obligation applies. Where the requesting telecoms provider has no such presence or intention, BT is not required to provide DFX.
- 6.166 We agree with Gigaclear that the restrictions in the current DFX RO could mean that a DFX user pays for space and power in an exchange before carrying out a survey that finds the circuit is not viable. We consider that Openreach should require presence in an exchange and payment for space and power, only if the DFX survey has been carried out and the DFX user has put in one or more orders for DFX from that exchange. We expect Openreach to update the DFX RO to reflect this.
- 6.167 We also agree with Gigaclear the current DFX RO may be interpreted to prohibit connections to any equipment that is not directly serving access services. To be clear, the purpose of the DFX remedy is to provide dark fibre to backhaul traffic from a BT Only exchange (with no competing networks close by) which provides wholesale access services, to any other BT exchange. The DFX remedy is not intended to be used to bypass or replace competitive routes between exchanges by using dark fibre circuits on alternative routes via BT Only exchanges (with no competing networks close by). For example, DFX is not intended to be used to substitute an active connection between two non-BT Only exchanges with dark fibre connections from these exchanges to one or more intermediate BT Only exchanges (with no competing networks close by).
- 6.168 However, the DFX RO should not prevent a telecoms provider from using DFX to backhaul from its access aggregation node to any of its core nodes and/or to build rings between access nodes for the purposes of resilience. For example, telecoms providers should be able to use DFX to connect to equipment whose primary function is to support the provision of access services and has the capability to switch or route traffic between routes for the purpose of providing resilience (see example in Figure 6.8 below). We expect Openreach to update the DFX RO to reflect this.

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<sup>421</sup> This includes regulated wholesale access services, such as WLA and LL Access services, as well as non-regulated wholesale access services, such as fixed wireless access.

Figure 6.8: DFX usage example for the purpose of providing resilience to BT+0 exchanges



Source: Ofcom

### Arrangements concerning provision of new infrastructure

- 6.169 As with DFA, we do not believe it is appropriate to set prescriptive rules in the SMP condition covering every circumstance. In our view, this would carry a risk of regulatory failure. We therefore supplement the DFX requirement with the following guidance on when the obligation would apply in cases involving the provision of new fibre infrastructure.
- 6.170 As with the DFA remedy, network extensions are outside the scope of the DFX remedy. This does not mean that Openreach is never required to construct new fibre infrastructure, but where it is required to do so, this will be for the purposes of facilitating access to its existing fibre IEC network.
- 6.171 As for the DFA remedy, the following three criteria<sup>422</sup> should be applied, to determine whether a particular adjustment to Openreach's network falls within the scope of its DFX obligation:
- a) **Is the requested adjustment necessary?** This criterion considers whether an alternative option exists which would render the requested adjustment unnecessary, provided this alternative allows for a reasonably equivalent outcome for the telecoms provider compared to making an adjustment.
  - b) **Is the requested adjustment feasible?** This criterion considers whether there are barriers that prevent Openreach from being able to make the required adjustment.

<sup>422</sup> These criteria take in to account the relevant factors set out in section 87(4) of the Act, in particular the first, second and sixth of the section 87(4) factors. With respect to the third and fourth factors set out in section 87(4) of the Act, our criteria are technologically and network design neutral and therefore take account of these factors. Section 87(4) also requires us to take into account the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed. For network adjustments in common parts of Openreach's network, the costs are capitalised and recovered from connection and rental charges for multiple services over time (see Volume 4 Section 5).

- c) **Does the requested adjustment improve efficiency?** This criterion considers whether the requested adjustment promotes efficiency and is therefore consistent with the rationale for requiring Openreach to provide dark fibre (i.e. to unlock the efficiencies from dark fibre).
- 6.172 In scenarios where this is duct with capacity, but no fibre, or there is duct with capacity but no spare fibre, the DFX obligation requires Openreach to lay new fibre in certain circumstances. The three criteria set out above are used to identify those circumstances.
- a) In relation to the first criterion (necessity), the relevant factors may include: whether there is an alternative route between the two exchanges that Openreach could provide dark fibre along; whether it would be possible to aggregate traffic between the two exchanges onto fewer fibres in order to free up fibre capacity; and whether the requesting operator could lay its own fibre using the PIA remedy (subject to our guidance in relation to the third criterion set out below);
- b) In relation to the second criterion (feasibility), the relevant factors may include whether there are any technical, operational or legal barriers that prevent Openreach from laying the new fibre (e.g. distance limits when installing fibre; traffic management or planning restrictions which make the laying of new fibre unfeasible);
- c) In relation to the third criterion (efficiency), the comparison should be between what Openreach would need to do to provide the requested dark fibre between two exchanges, and what a telecoms provider would need to do if it were to lay its own fibre using the PIA remedy. Where there are differences which mean Openreach can provide dark fibre more efficiently (for example, it may be quicker, easier and/or cheaper), it would be required to lay new fibre under the DFX obligation. For example, in circumstances where Openreach would need to lay fibre for sections of a route where fibre is exhausted, but other providers would need to lay fibre over the complete route, it is likely that Openreach can meet the request in a more efficient manner.
- 6.173 In the scenario where there is no direct duct between two BT exchanges, in our guidance in the 2019 BCMR, we said that we did not consider that the DFX obligation extends to building new duct. However, we now consider that there may be circumstances where Openreach would be required to lay new duct.<sup>423</sup> The three criteria set out above are used to identify those circumstances:
- a) In line with the first criterion set out above (necessity), Openreach should consider all alternative options recognising our guidance on distance limits. If the radial and route distances permit a route via other BT exchanges, this alternative route should be offered to the requesting provider.
- b) In relation to the second criterion (feasibility), the points above apply equally to this scenario.

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<sup>423</sup> In practice, we consider that this scenario (no duct between exchanges) seems unlikely.

c) In relation to the third criterion (efficiency), as set out above in relation to dark fibre access, in circumstances where Openreach would need to lay fibre for sections of a route where fibre is exhausted, but other providers would need to lay fibre over the complete route, it is likely that Openreach can meet the request in a more efficient manner.<sup>424</sup>

6.174 As with the DFA remedy, we expect Openreach to provide dark fibre in the same circumstances as it would have provided an active leased line, unless Openreach can justify not doing so. In particular, where Openreach has previously provided an active leased line for inter-exchange connectivity, we would expect it to also provide dark fibre inter-exchange. Where Openreach refuses to provide a connection (either an active leased line or DFX), but decides to provide that connection at a later stage, we expect Openreach to be able to clearly demonstrate a change of circumstances, meaning that the provision of the connection is now necessary, feasible and most efficient.

#### **Provisioning, repair and service migration processes**

6.175 We do not impose detailed obligations about the provisioning, repair and service migration process that Openreach has to follow. However, we consider that the processes that were developed for the dark fibre remedy imposed in the 2019 BCMR are suitable for the new DFA remedy.

#### **Ancillary services**

6.176 In addition to this specific access obligation, a number of ancillary services are necessary to enable and support the provision of DFX, including as a minimum space and power, site access, interconnect, Cablelink, TRCs, patch panels and any other supporting services used for installation, maintenance, modification, and ceasing of this specific service, including initial testing, right when tested (RWT) and cessation. The DFX obligation requires Openreach to provide these ancillary services.

6.177 In relation to exchanges where space and power is not available, we consider the situation with DFX to be different to DFA. As discussed above, an ancillary facility enabling external network termination is not necessary for DFA because, if there is no space and power in the local exchange, telecoms providers can request DFA to the next BT exchange (whether or not that exchange is BT Only). However, as discussed above, one of the aims of the DFX remedy is to enable infrastructure build in marginal access areas. This would not be possible if DFX users cannot connect to the local BT exchange where they may be using other wholesale products from Openreach or other operators.<sup>425</sup>

6.178 We therefore require Openreach to provide an ancillary facility enabling external network termination for a DFX circuit that terminates at an exchange in which space and power is not available, provided it is reasonable and feasible to do so. This is necessary to enable

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<sup>424</sup> See sub-section 'Arrangements concerning provision of new infrastructure' for the DFA remedy for more detail.

<sup>425</sup> This was supported by Gigaclear in its response to the January 2020 Consultation, paragraph 114.

the effective use of the DFX remedy in situations where the building of new accommodation space and power may be inefficient.

- 6.179 In its response to the January 2020 Consultation, Openreach also said that Ofcom's suggestion that DFA is directly spliced onto the ancillary facility undermines the current termination arrangements for DFX and those previously agreed for the 2016 DFA, which is for a dark fibre circuit to have a clear demarcation point at both ends of the service by terminating the service on a patch panel.<sup>426</sup> We agree. Our requirement is that Openreach provides an ancillary facility that can connect with the fibre of the access seeker. The exact way of doing this is for industry to agree.
- 6.180 Unlike the DFA remedy, we do not consider ECCs to be required for dark fibre inter-exchange. As described earlier, ECCs are necessary to enable the provision of an access leased line requested by a telecoms provider and are specific to an individual customer at an end-user site. This generally equates to fibre between a nearby fibre flexibility point and the customer's premises. As such, these are not applicable to inter-exchange circuits or the main link of an access circuit.

## Conclusion

- 6.181 We have decided that it is appropriate and proportionate to impose the DFX remedy at BT Only exchanges with no competing networks close by (i.e. where the nearest competing PCO network is more than 100m away) to address our competition concerns in relation to BT's SMP at these exchanges. We do not consider that a different type of obligation or a more limited network access requirement would be sufficient to address the competition concerns we have identified.
- 6.182 SMP Conditions 1 and 2 require BT to provide dark fibre access in the inter-exchange access markets. As set out in Section 3, Section 87(3) of the Act authorises Ofcom to impose network access requirements and we have taken into account the factors set out in section 87(4) of the Act.<sup>427</sup>

## Non-discrimination for the Dark Fibre Inter-exchange remedy

- 6.183 Our decisions on non-discrimination, which apply to all forms of network access, are set out fully in Section 3. In summary, we have decided to use the same non-discrimination approach for DFX, as stated above for DFA. This means that where Openreach supplies DFX to BT or non-BT customers, the EOI obligation applies. Where dark fibre is used by Openreach to provide active circuits downstream, the no undue discrimination obligation applies. Our decisions on non-discrimination, which apply to all forms of network access, are set out fully in Section 3.

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<sup>426</sup> Openreach response to the January 2020 Consultation, paragraphs 7.23, 7.83-7.91.

<sup>427</sup> Our commentary on the section 87(4) factors set out in Section 3 also applies, where relevant, to the specific network access remedies.

## Pricing of the Dark Fibre Inter-exchange remedy

### Our proposals

6.184 In the January 2020 Consultation, we proposed to impose a cost-based charge control on the provision of DFX.

### Stakeholder responses

6.185 Stakeholders did not raise any issues with our proposal to regulate DFX at cost.

6.186 Some stakeholders commented on how the DFX charge control is modelled. We discuss their comments in Annex 17.

### Our reasoning and decisions

6.187 We consider that for inter-exchange circuits between relevant sites where BT has SMP, Openreach has the incentive and the ability to fix and maintain dark fibre inter-exchange prices at an excessively high level so as to have adverse consequences for end-users. Excessive prices at the wholesale level could make it difficult for other providers to compete at the retail level with BT and may result in market exit. Excessively high wholesale charges are also likely to result in high retail prices, i.e. consumers would be paying more for a service than they should expect if wholesale prices were constrained by effective competition.

6.188 As set out in Section 1, our approach to remedies in Area 3 is to promote investment in gigabit-capable networks by Openreach, while also seeking to promote retail competition based on access to Openreach's networks. We consider that this objective is best achieved by cost-based DFX.

6.189 We consider that over time DFX will become the primary remedy to address our competition concerns arising from BT's SMP at BT Only exchanges and pricing it at cost is the best way to achieve this. We believe that the price of DFX should be set using a cost-based charge control with reference to the relevant components of BT's underlying passive infrastructure necessary for connections between exchanges. This includes the relevant forward-looking incremental costs incurred by Openreach in providing dark fibre inter-exchange services plus some mark-up to allow for the recovery of common costs. This approach will promote access-based retail competition and protect consumers while preserving Openreach's investment incentives.

6.190 Our detailed decisions for setting the charge control on dark fibre access in the inter-exchange market are discussed in Volume 4.

## Reference Offer for the Dark Fibre Inter-exchange remedy

### Our proposals

- 6.191 In the January 2020 Consultation, we proposed that Openreach should be required to publish a Reference Offer for DFX, agreed as part of industry negotiations, taking into account the proposed general requirements in Section 3 of that consultation. We also proposed a minor change to the SMP Conditions to require Openreach to publish a DFX RO either on the day of our statement or to have already published one prior to that day.

### Stakeholder responses

- 6.192 Stakeholders did not raise any issues with our proposals around the DFX RO.

### Our reasoning and decisions

- 6.193 We have decided that Openreach should be required to publish a RO for DFX, taking into account the general requirements in Section 3. The RO should include SLAs and SLGs for the completion of the provision of service and fault repair times.
- 6.194 Given that, following the BCMR 2019, Openreach has already published a DFX RO, we have decided to require Openreach to publish a DFX RO either on the day of our statement or to have already published one prior to that day.
- 6.195 To give effect to this decision, we set the SMP Condition 7 at Volume 7 requiring Openreach to provide a reference offer for dark fibre in the inter-exchange access market. As set out in Section 3, sections 87(6)(c) to (e) authorise the setting of SMP services conditions in relation to the Reference Offer.

## Quality of Service for the Dark Fibre Inter-exchange remedy

- 6.196 Our decisions on DFX QoS are set out in Volume 5 Section 4. In summary, we have decided to set QoS standards for the provisioning of DFX circuits at the same levels as those for active Ethernet circuits, and QoS standard for the repair of DFX by reference to the SLA, as is the case for active Ethernet circuits. When assessing compliance against the provisioning and repair QoS standards, we have decided to aggregate DFX and Ethernet performance data. We also require Openreach to report KPI data for DFX separately from its Ethernet circuits.

## 7. Regulation of geographic discounts and other commercial terms

- 7.1 In this section we set out our competition concerns in relation to geographic discounts and other commercial terms, and how we are using regulation to address these concerns.
- 7.2 This section primarily relates to concerns around Openreach using wholesale pricing structures to deter new network build by alternative network operators. As discussed in Volume 2 Section 1, Openreach and alternative providers have announced plans for significant scale fibre deployment over the period of this review. Openreach potentially faces a substantial erosion of its market share in areas where new networks are built, and therefore has incentives to deter new build.
- 7.3 We are concerned Openreach could do this using geographic discounts, therefore we have decided to prohibit geographic discounts on rental charges as follows:
- All VULA (including FTTP) – in the WLA Area 2 market and WLA Area 3 market.
  - Ethernet and WDM services – in the LL Access Area 2 market.
- 7.4 Openreach can apply to us for consent to use different geographic prices where this would otherwise be prohibited. We have previously granted consent for geographic pricing in relation to Openreach’s trials in Salisbury and Mildenhall.<sup>428</sup> We have issued a separate consultation on specific FTTP offers already in force which result in geographic price variation.<sup>429</sup> In order to avoid disruption to the market, we have decided to make a temporary exemption to the geographic prohibition for these named offers at SMP condition 4.8 so that Openreach does not have to disapply them from 1 April 2021.
- 7.5 We also consider that concerns may arise from other commercial terms. We have decided that we will consider proposed commercial terms that may deter new network build as they are notified by Openreach.<sup>430</sup> Where necessary we will intervene to prevent such terms, including through our direction making powers under SMP conditions. Below, we provide guidance on some types of terms that we may be concerned about in particular.
- 7.6 We have identified loyalty discounts or pricing contingent on large volume commitments as a particular concern. To facilitate us considering such terms, as noted in Section 3, Openreach is required to provide 90 days’ notification of commercial terms where the price or other contractual conditions are conditional on the volume and/or range of services.

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<sup>428</sup> Ofcom (2020), *Promoting competition and investment in fibre networks: Measures to support Openreach’s proposed trials in Salisbury and Mildenhall – migrating customers to fibre and withdrawing copper services*, [accessed 11 March 2021].

<sup>429</sup> <https://www.ofcom.org.uk/consultations-and-statements/category-2/existing-openreach-ftp-offers-with-geographic-pricing>

<sup>430</sup> We have adopted a 90-day notification for commercial terms where the price or other contractual conditions are conditional on the volume and/or range of services. Other types of pricing/commercial terms that may deter new network build may also be considered as notified by Openreach under the Access Change Notice.

7.7 The rest of this section is structured as follows:

- Competition concerns
- Rationale for ex ante regulation
- Form of ex ante regulation – geographic discounts
- Form of ex ante regulation – other commercial terms
- Conclusion

## Competition concerns

### Geographic discounts

7.8 In the January 2020 Consultation we set out our concern that Openreach may use geographically targeted price reductions, which involve charging different prices for the same wholesale access, in order to deter rollout in areas where others are starting/planning to roll out new fibre networks. This could happen both where Openreach reduces prices ahead of build occurring (e.g. in response to an announcement of rollout) or where Openreach reduces prices after rollout has occurred.

### Stakeholder responses

7.9 BT Group and Openreach argued that Openreach does not have SMP in relation to ultrafast services which meant that our concerns were not warranted.<sup>431</sup> BT Group said that competition from Virgin Media would prevent it from setting higher prices in the future, and setting low prices may be irrational if Virgin Media could undercut it in the future.<sup>432</sup> It said Virgin Media could easily withstand lower ultrafast prices than Openreach due to its sunk cost base.<sup>433</sup> Openreach said we had not provided evidence to back up our concerns.<sup>434</sup>

7.10 Others agreed with our concerns.<sup>435</sup> CityFibre considered that it may be rational for Openreach to adopt a policy of predatory pricing given the scale of the market loss that it may otherwise incur.<sup>436</sup> It strongly agreed that Openreach could use wholesale pricing structures to reduce returns to alternative network investors.<sup>437</sup> Axione noted that this is a critical time to encourage alternative network investment.<sup>438</sup> TalkTalk noted that [§<].<sup>439</sup>

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<sup>431</sup> BT Group, paragraph 4.17-4.20; Openreach, paragraphs 1.23b and 4.18; in their responses to the January 2020 Consultation.

<sup>432</sup> BT Group response to the January 2020 Consultation, paragraph 4.23.

<sup>433</sup> BT Group response to the January 2020 Consultation, paragraph 4.24.

<sup>434</sup> Openreach response to the January 2020 Consultation, paragraphs 4.31-4.32.

<sup>435</sup> INCA, page 143; Axione, paragraphs 1.32 and 5.49; UKTCA, paragraph 9; in their responses to the January 2020 Consultation.

<sup>436</sup> CityFibre response to the January 2020 Consultation, paragraph 7.102.

<sup>437</sup> CityFibre response to the January 2020 Consultation, paragraph 7.25.

<sup>438</sup> Axione response to the January 2020 Consultation, paragraphs 1.34 and 5.50.

<sup>439</sup> TalkTalk response to the January 2020 Consultation, paragraph 3.18.

## Our analysis and conclusions

- 7.11 We remain of the view that Openreach has an incentive to use geographically targeted price reductions to undermine alternative network rollout. If Openreach lowers its prices in an area where it faces competition, this may reduce its returns in that area.<sup>440</sup> However, this strategy may still benefit Openreach in the longer term. If its actions deter new network build, then it will face reduced competition and benefit from a higher market share and the ability to charge higher prices over the longer term.
- 7.12 Rolling out FTTP is resource intensive and it is not possible to roll out in all areas simultaneously. If Openreach targeted discounts in areas where alternative new network is being built, this could reduce its competitors returns in the area and ultimately curtail its wider investment plans. This means Openreach may be able to deter large scale alternative network rollout (and therefore face reduced competition over a wider area) by reducing prices in relatively few local areas. Openreach intends to roll out FTTP on a large scale. Even if reducing prices locally results in lower returns in some areas, this may not be significant in the context of its overall FTTP investment.
- 7.13 The return Openreach earns on its FTTP rollout will depend on the extent of competitor build. Openreach's internal analysis [§].<sup>441</sup> The potential financial gains to Openreach from defending its market share in the face of competition from alternative networks are large. Openreach's own internal analysis [§].<sup>442</sup>
- 7.14 We disagree with BT Group's assertion that Openreach does not have SMP in relation to ultrafast services, as discussed in Volume 2 Section 8.<sup>443</sup>
- 7.15 We also disagree with BT Group's view that Openreach would not have an incentive to use targeted geographic discounts because competition from Virgin Media would prevent it from setting higher prices in the future. As discussed in Volume 2 Section 8, we recognise that, in principle, potential wholesaling by Virgin Media would exert a constraint on Openreach. However, there is substantial uncertainty around whether Virgin Media would make this change and how effective it might prove to be in practice.
- 7.16 We also recognise that Virgin Media exerts an indirect constraint on Openreach via its position at the retail level. However, we consider this constraint is limited for the reasons set out in Volume 2 Section 8.
- 7.17 Overall, we cannot rely on competition from Virgin Media to deter Openreach from using targeted geographic discounts to deter competitive investment.

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<sup>440</sup> When facing competition in an area it may also be profit maximising to reduce prices in order to retain market share.

<sup>441</sup> Openreach response dated 10 September 2020 to the s.135 notice dated 20 August 2020. [§].

<sup>442</sup> Openreach response dated 12 August 2019 to the s.135 notice dated 29 July 2019. [§].

<sup>443</sup> BT Group said that we have not considered whether Virgin Media could act in a way that would undermine new network build. BT Group, response to the January 2020 Consultation, 4.20.

The remedies we are imposing in this market review apply to operators which we have found to hold SMP. We have not found that Virgin Media has SMP in any of the markets in consideration in this Review.

## Other commercial terms

- 7.18 In the January 2020 Consultation we set out our concern that Openreach could design commercial terms which undermine alternative network operator rollout.<sup>444</sup> For example, commercial arrangements such as loyalty discounts or pricing contingent on large volume commitments from wholesale customers, which penalise access seekers for moving volumes from Openreach to an alternative network operator.
- 7.19 We explained that our concerns could apply to all the products and geographic markets for all WLA and leased line markets where we proposed in the January 2020 Consultation that BT has SMP.<sup>445</sup>

## Stakeholder responses

- 7.20 CityFibre considered that Openreach has an incentive to make offers to dissuade access seekers from using alternative providers.<sup>446</sup> It argued that Openreach's national coverage gives it an advantage and access seekers have little bargaining power with Openreach.<sup>447</sup>
- 7.21 Virgin Media was concerned that Openreach could use volume and term-based discounts to deter access seekers from switching and foreclose competition.<sup>448</sup>
- 7.22 Vodafone, euNetworks, TalkTalk, UKTCA and Axione agreed with our concerns about other commercial terms but thought our proposals should go further.
- 7.23 BT Group argued that we should enable Openreach to reach commercial deals with access seekers.<sup>449</sup> It considered such arrangements could help Openreach compete with established players, and deliver benefits to consumers through lower long term prices and/or accelerated investment.<sup>450</sup> BT Group noted statements made by the EC and the UK Government suggesting that commercial deals which result in risk sharing could help to support investment.<sup>451</sup>
- 7.24 Openreach considered that competitive conditions and/or market dynamics differed across services provided on i) the existing copper network; ii) the FTTP network and iii) for leased lines. It argued commercial terms would need to be considered on a case-by-case basis taking into account the nature of the possible concerns. For example, it considered access seekers should be able to commit to purchase certain volumes of ultrafast services from it,

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<sup>444</sup> We did not consider other commercial terms in our July 2020 Consultation.

<sup>445</sup> Axione, County Broadband, Zoomm and INCA responses to the July 2020 Consultation suggest they interpreted our concerns around commercial terms only applied in Area 2. We can confirm this is not the case. In the January 2020 consultation we said, "Our concerns could apply to all the products and geographic markets where we have found that BT has SMP in this review excluding PIA and IEC (i.e. for all WLA and leased line markets)", paragraph A15.59, January 2020 Consultation. Our concerns (and approach set out below) also apply to Area 3. Axione, paragraph 4.7; County Broadband, paragraph 59; Zoomm, paragraph 60 and INCA, page 11 responses to the July 2020 Consultation.

<sup>446</sup> CityFibre response to the January 2020 Consultation, paragraph 7.32.

<sup>447</sup> CityFibre response to the January 2020 Consultation, paragraphs 7.37 and 7.39.

<sup>448</sup> Virgin Media response to the January 2020 Consultation, paragraphs 69-70 and 76-77.

<sup>449</sup> BT Group response to the January 2020 Consultation, paragraph 4.4.

<sup>450</sup> BT Group response to the January 2020 Consultation, paragraphs 4.2 and 4.31.

<sup>451</sup> BT Group response to the January 2020 Consultation, paragraph 4.34.

providing this was not contingent on maintaining volumes of existing (i.e. FTTC and/or leased lines) services.<sup>452</sup>

- 7.25 Openreach argued that the market is moving towards contracts that provide long term prices in return for purchasing commitments.<sup>453</sup> It argued we have not adequately considered benefits of volume discounts, as follows:<sup>454</sup>
- a) Discounts can stimulate demand and provide long term price certainty for consumers. Openreach suggests that volume discounts could be targeted to local areas with lower demand to induce customers to switch and benefit from FTTP sooner. It considered that this would improve allocative and dynamic efficiency.
  - b) Access seekers can develop long term strategies to drive FTTP demand and take-up. Greater volume certainty for Openreach FTTP supports the FTTP investment case and faster rollout. Openreach argued that this would improve dynamic efficiency.
  - c) Facilitating faster switch off for the copper network which could save costs in running two networks. Openreach argued reducing total costs would improve productive efficiency.
  - d) Volume contingent pricing could help it to meet competition from Virgin Media.<sup>455</sup> Openreach argued preventing competitive commercial offers could lead to higher prices and less choice.<sup>456</sup>
- 7.26 Sky argued that we should consider the benefits of long term commercial agreements e.g. supporting Openreach FTTP investment and providing access seekers with greater pricing certainty.<sup>457</sup> Sky recognised that long term commitments may reduce the scope for alternative network rollout, but considered that restricting Openreach’s commercial flexibility could mean that its FTTP rollout is slower and/or smaller.<sup>458</sup>
- 7.27 Openreach argued that we had not adequately considered the impact of access seekers having “leverage power” i.e. the ability to purchase from alternative networks.<sup>459</sup>
- 7.28 BT Group and Openreach argued (as they did in relation to geographic discounts) that Openreach does not have SMP in relation to ultrafast services so our concerns were not warranted.<sup>460</sup>

### Our analysis and conclusions

- 7.29 We recognise that commercial terms may have benefits e.g. volume discounts may provide short term benefits to access seekers and may, in turn, benefit consumers through lower

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<sup>452</sup> Openreach response to the January 2020 Consultation, paragraph 4.60.

<sup>453</sup> Openreach response to the January 2020 Consultation, paragraph 4.19.

<sup>454</sup> Openreach response to the January 2020 Consultation, paragraph 4.63.

<sup>455</sup> Openreach response to the January 2020 Consultation, paragraph 4.66.

<sup>456</sup> Openreach response to the January 2020 Consultation, paragraph 4.67.

<sup>457</sup> Sky response to the January 2020 Consultation, pages 6 and 8.

<sup>458</sup> Sky response to the January 2020 Consultation, page 11-12.

<sup>459</sup> Openreach response to the January 2020 Consultation, paragraph 4.63a.

<sup>460</sup> BT Group, paragraphs 4.17-4.20; Openreach, paragraph 4.18; in their response to the January 2020 Consultation.

prices (if cost savings are passed through).<sup>461</sup> However, our objective is to promote competition and investment in gigabit-capable networks by Openreach and others, and the resulting network competition should benefit consumers in the long term. If Openreach uses commercial terms that undermine new network build, our starting point is that they are likely contrary to the interests of consumers in the long term. In this context, terms which could induce loyalty e.g. Openreach offering lower prices in return for large volume commitments, are a particular concern because this could deter access seekers from switching demand to new alternative networks.

- 7.30 Openreach is the only operator with a national network footprint. In order to serve the national market access seekers must purchase at least some wholesale services from Openreach (i.e. in areas where there is no alternative network). Openreach could design commercial terms which mean access seekers face a significantly higher average charge for services purchased from Openreach if they don't purchase all their services from Openreach. This would undermine the business case for sub-national competitive entry. We discuss below the advantages Openreach has over alternative operators building new networks.
- 7.31 While in Area 3 there is unlikely to be potential for material and sustainable competition to BT in the commercial deployment of competing networks, we expect some new alternative network build in Area 3. Consequently, our concerns also apply here in that Openreach could use commercial terms which applied in Area 3 alone to deter such build, potentially depriving consumers of greater choice and competition.
- 7.32 We agree with Openreach that any commercial terms should be considered on a case-by-case basis in light of the possible concerns they raise. However, we disagree with Openreach's argument that we should not be concerned with access seekers committing to purchase certain volumes FTTP from it, providing this was not contingent on maintaining volumes of existing services with Openreach. New network builders that operate a wholesale model rely on selling ultrafast services to access seekers. If Openreach uses commercial terms to induce loyalty from access seekers, meaning they purchase all or most of their ultrafast requirements from Openreach, then it will deprive these network operators of demand. Ultimately this could undermine alternative operators' FTTP investment plans.
- 7.33 Our objective is to promote competition and investment in gigabit-capable networks by Openreach and other operators. We consider that our proposed package of remedies achieves this. In particular, we consider that Openreach could promote FTTP and compete with Virgin Media without using commercial terms which could deter access seekers from switching demand to alternative networks. For example, to compete with Virgin Media, Openreach could lower prices across the whole of Area 2 as this closely corresponds to the

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<sup>461</sup>While such deals might have benefits for consumers (if their impact in excluding new competition is ignored) those benefits are not guaranteed. If Openreach is unable to use volume deals to target its response to competition, it might instead use straightforward price cuts that could have greater benefits for consumers.

Virgin Media footprint. Openreach could also use attractive FTTP pricing without volume commitments to promote FTTP uptake.

## Rationale for *ex ante* regulation

7.34 In the January 2020 Consultation we considered that the restrictions on Openreach's pricing and other commercial terms resulting from other SMP obligations and competition law were insufficient to protect new entry. We proposed to impose *ex ante* regulation to address our competition concerns.

## Stakeholder responses

- 7.35 Most respondents that commented on this issue agreed that *ex ante* regulation was necessary.<sup>462</sup> CityFibre noted that competition law is not the right tool for *promoting* competition. It noted that competition law requires *ex post* assessment after harm has arisen and may take many years. *Ex ante* regulation provides clarity and certainty in a more immediate way.<sup>463</sup> Three agreed that *ex ante* regulation gives greater certainty.<sup>464</sup>
- 7.36 Vodafone noted that even the threat of a price change by the incumbent may be sufficient to alter an entrant's behaviour.<sup>465</sup>
- 7.37 Openreach argued that competition law is sufficient.<sup>466</sup> It said we have not assessed what behaviour could be permitted under competition law that would still result in exclusion of new entrants or provided analysis to justify our proposals.<sup>467</sup> Openreach was concerned that we would set a high evidential hurdle which would place it at a competitive disadvantage.<sup>468</sup> It argued that our proposed remedies could impede competition and were disproportionate.<sup>469</sup>
- 7.38 Sky considered that competition law will often provide an adequate backstop for anticompetitive behaviour.<sup>470</sup>
- 7.39 Openreach argued that we should not protect or promote entry by alternative networks.<sup>471</sup> It said we should only be concerned about efficient entry. BT Group argued that our regulation may encourage alternative networks to invest on the presumption that they are insulated from competition and this could result in higher prices for consumers or competition which is not sustainable in the long term.<sup>472</sup>

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<sup>462</sup> CityFibre, paragraph 7.44; Virgin Media, paragraph 68; INCA, paragraphs 142-143; KCOM, paragraph 2.15; Three, paragraph 14.2; UKCTA, paragraph 9; euNetworks, paragraphs 18-19; Axione, paragraph 1.32; Vodafone, Part one, paragraph 5.4 in their responses to the January 2020 Consultation.

<sup>463</sup> CityFibre response to the January 2020 Consultation, paragraphs 7.46-7.50.

<sup>464</sup> Three response to the January 2020 Consultation, paragraph 14.2.

<sup>465</sup> Vodafone, Annex 2 response to the January 2020 Consultation, page 20.

<sup>466</sup> Openreach response to the January 2020 Consultation, paragraph 4.25.

<sup>467</sup> Openreach response to the January 2020 Consultation, paragraphs 4.15 and 4.25.

<sup>468</sup> Openreach response to the January 2020 Consultation, paragraph 4.14.

<sup>469</sup> Openreach response to the January 2020 Consultation, paragraph 4.22.

<sup>470</sup> Sky response to the January 2020 Consultation, page 12.

<sup>471</sup> Openreach response to the January 2020 Consultation, paragraph 4.37.

<sup>472</sup> BT Group response to the January 2020 Consultation, paragraph 4.61.

- 7.40 Openreach and BT Group said we should make it clear that our regulation only applies when pricing is targeted at new entrants, not existing players.<sup>473</sup>
- 7.41 Stakeholders made a number of other comments that are relevant to our consideration of whether *ex ante* regulation is necessary, which we address in our analysis below.
- 7.42 Several stakeholders commented on the difficulties and costs of switching wholesale providers and multi-sourcing.<sup>474</sup> BT Group argued that such costs are outweighed by potential savings<sup>475</sup> and noted a number of providers multi-source.<sup>476</sup>
- 7.43 TalkTalk and Gigaclear argued that as the only operator with national coverage Openreach has a ubiquity cost advantage,<sup>477</sup> although BT Group disputed this given that Virgin Media has a larger ultrafast network,<sup>478</sup> and argued that PIA removes Openreach's cost, coverage and speed of provision advantages.<sup>479</sup>

## Our analysis and conclusions

### We are seeking to support new network build during the early phase of roll out

- 7.44 The competition concerns set out above primarily relate to new network build by alternative operators, rather than established operators within their existing footprint.<sup>480</sup> Where an established operator is building new network, we would consider this as new network build (i.e. it falls under our competition concern).
- 7.45 Alternative operators building new networks face considerable challenges in becoming established and overcoming the incumbency advantages of Openreach. For example, Openreach benefits from economies of scale, meaning it has lower unit costs than an entrant. In relation to FTTP networks, a key advantage comes from it having high existing customer volumes.
- 7.46 In addition, Openreach has an established relationship with existing access seekers and some level of systems/process integration. Because no other operator has national coverage, access seekers will have to purchase wholesale services from Openreach in some parts of the UK. As discussed below, there is a cost to access seekers dealing with multiple network operators, which means that alternative network operators are likely to need to offer terms that are at least as attractive as Openreach's to win business.
- 7.47 BT Group argued that systems integration costs are unlikely to be a material barrier to switching provider or multi sourcing given the potential cost savings. It argued that the benefit to an access seeker from being able to address a larger ultrafast base would exceed

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<sup>473</sup> BT Group, paragraph 4.51; Openreach, paragraph 4.47 in their responses to the January 2020 Consultation.

<sup>474</sup> Vodafone, Part one, paragraphs 3.55-3.56; TalkTalk, paragraph 4.136; Gigaclear, paragraph 69; in their responses to the January 2020 Consultation.

<sup>475</sup> BT Group response to the January 2020 Consultation, paragraphs 2.29 and 4.19.

<sup>476</sup> BT Group response to the January 2020 Consultation, paragraph 2.30.

<sup>477</sup> TalkTalk, paragraph 4.136; Gigaclear, paragraph 69; in their responses to the January 2020 Consultation.

<sup>478</sup> BT Group response to the January 2020 Consultation, paragraph 4.19.

<sup>479</sup> BT Group response to the January 2020 Consultation, paragraphs 2.28 and 4.38

<sup>480</sup> By 'established' operator we mean one with a longstanding network with an established and significant customer base.

the costs of buying from multiple networks, once the alternative network reaches significant scale (e.g. ~1m residential premises).<sup>481</sup> It noted that Vodafone and TalkTalk are using both Openreach and CityFibre as a wholesale provider.<sup>482</sup>

- 7.48 However, Vodafone, TalkTalk and Gigaclear said that it is difficult to switch wholesale provider. Vodafone noted that migrations are complex and time consuming.<sup>483</sup> TalkTalk noted access seekers will want to connect with only a few networks, as there are significant fixed/sunk costs of systems integration and complexity costs from offering products over multiple networks.<sup>484</sup> It noted Openreach’s ubiquity gives it an advantage over other networks because every access seeker must connect to it (to provide national coverage). Gigaclear commented that Openreach has advantages due to its network and pre-established relationships with access seekers. [38].<sup>485</sup> In Volume 2 Section 8 we noted that information gathered from access seekers suggested that dual-sourcing may be commercially viable in some cases. However, as there is a cost to buying from multiple networks, an effective competitor needs to have significant scale, or to be able to offer some other advantage which offsets the cost.
- 7.49 BT Group argued that Openreach cannot leverage its national network as Virgin Media has a larger ultrafast network.<sup>486</sup> It also considered that PIA removes Openreach’s cost, coverage and speed of provision advantages.<sup>487</sup> We recognise that Openreach’s FTTP network currently covers fewer premises than the Virgin Media network. However, this is not significant as, over the near term, most consumers will still be using standard or superfast services on the Openreach network (and many will continue to do so until forced to migrate to FTTP) meaning Openreach can compete with Virgin Media using its existing network and services. As discussed in Volume 2, we expect Openreach to significantly expand its FTTP network. Access seekers will consider Openreach’s current and planned FTTP footprint when deciding which wholesaler to use. [39].<sup>488</sup> Openreach has a relationship with all the main access seekers and it is in a strong position to migrate customers to its FTTP network as this is built.
- 7.50 We note that PIA could reduce the costs of new network build in some cases, however, this is of little significance if new networks are unable to attract access seekers due to Openreach using pricing or other commercial terms to deter switching. If Openreach is able to deprive new networks of demand, they will fail.
- 7.51 We consider it unlikely that our regulation would contribute to entry which is not sustainable in the long term (as suggested by BT Group and Openreach). Rather, it is designed to prevent targeted action on the part of Openreach that has the potential to reduce the scope of competitive entry. Our emphasis on supporting the emergence of new

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<sup>481</sup> BT Group response to the January 2020 Consultation, paragraphs 2.29 and 4.19.

<sup>482</sup> BT Group response to the January 2020 Consultation, paragraph 2.30.

<sup>483</sup> Vodafone, Part one response to the January 2020 Consultation, paragraph 3.56.

<sup>484</sup> TalkTalk response to the January 2020 Consultation, paragraph 4.136.

<sup>485</sup> Gigaclear response to the January 2020 Consultation, paragraph 69.

<sup>486</sup> BT Group response to the January 2020 Consultation, paragraph 4.19.

<sup>487</sup> BT Group response to the January 2020 Consultation, paragraphs 2.28 and 4.38.

<sup>488</sup> Openreach response dated 26 February 2021 to the s.135 notice dated 16 February 2021, Q2.

competition does not extend to permanent protection or measures that risk eliminating price competition with the consequential harm to consumers that would result.

### Ex ante regulation is clearer and more effective

- 7.52 In line with our approach to remedies set out in Section 1, we have considered whether *ex ante* regulation is warranted or whether competition law, in particular the rules prohibiting the abuse of a dominant position, would be effective in responding to the competition concerns identified above.
- 7.53 Appropriate *ex ante* intervention at the upstream level can promote effective competition in downstream markets. It can also facilitate the emergence of effective competition at the upstream level itself. Competition law, insofar as is relevant, prohibits the abuse of a dominant position – it does not seek to promote competition, which is one of the aims of our package of *ex ante* remedies. Our concerns go beyond Openreach setting potentially anti-competitive prices within the meaning of competition law, and extend to the broader impact that commercial terms may have on alternative network operators’ incentives to invest in FTTP.
- 7.54 Further, competition law addresses anti-competitive behaviour after it has happened and, in this context, we do not consider it is a sufficiently timely deterrent to stop Openreach from acting in a way that deters new network rollout.
- 7.55 In the case of Royal Mail/Whistl,<sup>489</sup> the notification of pricing changes by Royal Mail was found to be likely to give rise to a competitive disadvantage and deter entry. Our *ex post* case found that Royal Mail abused its dominant position but, by the time of the infringement decision the potential benefits of end-to-end competition in the bulk delivery market were forgone.<sup>490</sup> We are concerned that a similar scenario could arise in relation to ultrafast network rollout if we were to rely solely on *ex post* competition law (as suggested by BT Group/Openreach).
- 7.56 We have a relatively small window of opportunity to encourage new network build. If alternative operators are unable to secure sufficient access seekers/end users over a reasonable time period then it is unlikely they will be able to secure funds from investors for their FTTP rollout plans. Competition law cases can take years to reach resolution and new network builders may be unable to secure access seekers while a competition case is ongoing (e.g. because it is unclear whether commercial terms introduced by Openreach will be ultimately be deemed unlawful).

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<sup>489</sup> The judgement is available on the Competition Appeal Tribunal website – see

<https://www.catribunal.org.uk/judgments/12991318-royal-mail-plc-v-office-communications-judgment-2019-cat-27-12-nov-2019>, [accessed 11 March 2021].

<sup>490</sup> In January 2014, Royal Mail announced new prices. Ofcom announced its decision to open an investigation in February 2014. Ofcom’s investigation led to a decision in August 2018. This found that Royal Mail had infringed Chapter II of the Competition Act 1998 and Article 102 of the Treaty on the functioning of the European Union. It imposed a penalty of £50 million. Royal Mail appealed the decision to the Competition Appeal Tribunal, which issued a Judgment in November 2019 upholding Ofcom’s decision.

7.57 We consider that *ex ante* regulation makes it clearer to Openreach and others what conduct is not permitted. This ensures transparency, promotes regulatory certainty and provides alternative networks investors with confidence to invest. In contrast, *ex post* enforcement, which may take longer to conclude in the event of enforcement activity, would not provide the same degree of regulatory certainty which is itself an important factor in any investment decision.

#### Other remedies do not address our concern

7.58 We have considered whether our other SMP remedies are sufficient to address our concerns. Our charge controls (discussed in Volume 4) apply a cap on certain charges. The charge controls would not stop Openreach from introducing geographic discounts or other commercial terms that may be a concern.

7.59 The general requirements for network access to be on fair and reasonable terms, conditions and charges, and not to be unduly discriminatory, could be used to regulate geographic discounts and other commercial terms. We also have powers of direction both in relation to these requirements and on the reference offer. However, in the case of geographic discounts, we consider that none of these provides the regulatory certainty that is necessary.

7.60 If Openreach introduced other commercial terms that deterred use of new alternative network, then we could use our powers to direct Openreach to remove certain terms. However, this process would take time, and if the terms have already been introduced, it could create market disruption. We have identified that loyalty inducing terms e.g. where Openreach offers lower prices in return for large volume commitments are a particular concern, because this could deter access seekers from switching demand to new alternative networks. Therefore, we have decided to adopt additional *ex ante* regulation (a 90-day notification period) for commercial terms where the price or other contractual conditions are conditional on the volume and/or range of services purchased. This would allow us time to investigate, and if appropriate prevent, such commercial terms before they come into force.

### Form of *ex ante* regulation – geographic discounts

7.61 In the January 2020 Consultation we proposed to prohibit Openreach from making geographically targeted price reductions for certain services as follows:

- VULA except FTTP – prohibit geographic discounts on rental charges in each of Area 2 and Area 3.
- FTTP – prohibit geographic discounts on rental charges in Area 2.
- Ethernet and WDM services – prohibit geographic discounts on rental charges in the LL Access Area 2 market.

7.62 In the July 2020 consultation we proposed to extend the prohibition to cover geographic discounts on FTTP rental charges in Area 3.

- 7.63 We proposed SMP conditions such that geographic discounts by Openreach would amount to undue discrimination.
- 7.64 We also proposed a consent process whereby Openreach could apply to us to exempt geographic pricing that would otherwise be prohibited.

## Stakeholder responses

- 7.65 Most stakeholders that commented agreed with our proposals.<sup>491</sup>
- 7.66 Openreach and BT Group argued we should not prohibit geographic pricing because it can have benefits.<sup>492</sup> For example, if costs vary geographically it may be efficient for prices to vary geographically. Also, localised offers may help to stimulate demand and recovering more common costs from more price inelastic consumers can lead to an efficient consumer outcome.
- 7.67 Openreach argued that our proposals would restrict its ability to compete and respond promptly to customer needs.<sup>493</sup> BT Group argued that Openreach needed flexible local pricing to underpin its FTTP investment and compete with Virgin Media.<sup>494</sup> [3<].<sup>495</sup>
- 7.68 BT Group argued that competition law principles should form the basis of any assessment, even if applied as *ex ante* rules.<sup>496</sup> It asked us to set a clear end date/criteria for when the rules will be lifted to manage expectations and avoid disputes.<sup>497</sup>
- 7.69 Openreach argued the proposals were an illegitimate use of our powers under the Act. It considered ‘undue discrimination’ is focused on preventing an undertaking from offering preferential treatment to downstream retail subsidiaries, whereas our proposed SMP conditions were focussed on controlling Openreach’s pricing in the wholesale market.<sup>498</sup>
- 7.70 TalkTalk continued to argue for a price floor in the context of their alternative proposals for adaptive remedies.<sup>499</sup> Axione argued that a price floor based on a ‘reasonably efficient operator’ would be a pro-competitive measure that would reduce risk to alternative network investors.<sup>500</sup>

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<sup>491</sup> Axione, paragraphs 5.55-5.56, CityFibre, paragraph 7.52; euNetworks, paragraphs 18-19; INCA, paragraph 143; KCOM, paragraph 2.15; [Swish](#), paragraph 21; Three, paragraph 14.2; Virgin Media, paragraph 68; and Vodafone, Part one, paragraph 5.4 in their responses to the January 2020 Consultation.

<sup>492</sup> BT Group, paragraphs 4.29-4.31; Openreach, paragraph 4.39; in their responses to the January 2020 Consultation.

<sup>493</sup> Openreach response to the January 2020 Consultation, paragraph 4.22.

<sup>494</sup> BT Group response to the January 2020 Consultation, paragraph 4.30.

<sup>495</sup> [3<]

<sup>496</sup> BT Group response to the January 2020 Consultation, paragraphs 4.55-4.56. [BT Group](#) response to the July 2020 Consultation, paragraph 3.31.

<sup>497</sup> BT Group response to the January 2020 Consultation, paragraphs 1.30 and 4.67. BT Group response to the July 2020 Consultation, paragraph 3.29.

<sup>498</sup> Openreach response to the January 2020 Consultation, paragraphs 4.89-4.91.

<sup>499</sup> TalkTalk response to the January 2020 Consultation, paragraph 5.123.

<sup>500</sup> Axione response to the January 2020 Consultation, paragraphs 5.53 and 5.81-5.86.

## Our analysis and conclusions

- 7.71 We have decided to restrict Openreach’s ability to discriminate through geographically targeted price reductions by imposing a specific provision in our no undue discrimination condition (SMP Condition 4); specifically, this makes it clear that Openreach is prohibited from charging different prices in different geographic areas for rental services, except where we otherwise consent. We refer to this as the geographic discrimination prohibition.
- 7.72 The geographic discrimination prohibition we are imposing prevents differentiated prices and other pricing measures which might have the same effect. We consider that Openreach applying a migration credit of any form in effect reduces rental charges. As such, applying a credit on a geographic basis amounts to charging different prices in different geographic areas for rental services and is therefore prohibited under the geographic discrimination prohibition.
- 7.73 In recognition that in some cases there could be benefits from geographic pricing, our regulation provides for Openreach to request exemptions which we consider later in this section. While this places some additional burden on Openreach, we consider that this is justified in the context of our overarching strategy to promote network competition, and the competition concerns we have identified in our market analysis.
- 7.74 The geographic discrimination prohibition is intended to support alternative networks in rolling out new networks. We will assess the need for it at each market review and expect to remove it when network competition is more established. However, it is not possible for us to set a clear end date at this point because it is not certain how fast new networks will be deployed and become established.
- 7.75 We do not agree with Openreach that undue discrimination is only focussed on preventing an undertaking from offering preferential treatment to downstream subsidiaries. While this is an important facet of discrimination, the relevant power extends to “*requiring the dominant provider not to discriminate unduly against particular persons, or against a particular description of persons*”,<sup>501</sup> not just in favour of its downstream business. We have set out in detail our competition concerns and why we consider the geographic discrimination prohibition is appropriate. In the 2018 WLA we also imposed SMP condition 4.4 which stated that “*..the Dominant Provider may be deemed to have shown undue discrimination if in a Relevant Year it charges different prices in different geographic areas for rental services used to provide network access to VULA...*”.<sup>502</sup> Therefore, using an undue discrimination condition to prohibit geographic pricing is not novel.
- 7.76 We remain of the view that a prohibition on geographic discounts is a simpler and more proportionate means of addressing our competition concern than a price floor. A floor would continue to allow Openreach to target price cuts in areas where entry occurred at relatively low cost to itself. As discussed in our January 2020 Consultation, a floor set too high would risk artificially inflating prices, while a floor set too low might give Openreach

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<sup>501</sup> Section 87(6)(a) of the Act.

<sup>502</sup> Ofcom, [2018 WLA legal instruments](#), SMP Condition 4.4, [accessed 11 March 2021].

more commercial flexibility, but would not be as effective at preventing Openreach from setting low prices selectively in specific areas.<sup>503</sup>

## Charges that the geographic discrimination prohibition will apply to

7.77 In the January 2020 Consultation we proposed that the geographic discrimination prohibition should apply to rental but not connection/ancillary charges.

### Stakeholder responses

7.78 Except for BT Group and Openreach (who argued we should not regulate geographic pricing for FTTP or leased lines at all)<sup>504</sup> stakeholders that commented on this issue agreed that the non-discrimination condition should apply to rental charges. Some stakeholders considered that the non-discrimination condition should also apply to ancillary charges e.g. connection and installation.

7.79 CityFibre and Axione argued that discounts to connection fees would be detrimental to alternative operators.<sup>505</sup> Axione argued that discounts to Openreach's connection charges on a geographic basis could deter access seekers from switching to alternative networks and undermine network investment.<sup>506</sup> CityFibre noted that waiving the connection fee on the 40/10 FTTP list price could represent a 22% reduction on the total wholesale cost to the access seeker over a two-year customer lifetime.<sup>507</sup> CityFibre also said that FTTP connection fees have tended to increase over time while rentals have decreased, and a discount on connections has a larger impact on access seeker cashflows given that it is an upfront cost.<sup>508</sup>

7.80 CityFibre and Axione noted that Openreach has offered connection discounts, and Axione argued that this indicates that they are important.<sup>509</sup>

7.81 TalkTalk said there was no objective reason for excluding connection charges from the prohibition.<sup>510</sup>

### Our analysis and conclusions

7.82 We have considered whether the geographic discrimination prohibition should be extended to include ancillary charges. We have focussed on FTTP connection charges which seemed to be the main concern of stakeholders.

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<sup>503</sup> Paragraphs A15.80-A15.88 of the January 2020 Consultation.

<sup>504</sup> BT Group, paragraph 4.5; Openreach, paragraph 4.3, in their responses to the January 2020 Consultation.

<sup>505</sup> Axione, paragraph 5.59; CityFibre, paragraph 7.58; in their responses to the January 2020 Consultation.

<sup>506</sup> Axione response to the January 2020 Consultation, paragraphs 5.58-5.62.

<sup>507</sup> CityFibre response to the January 2020 Consultation, Figure 7.1, page 131.

<sup>508</sup> CityFibre response to the January 2020 Consultation, paragraphs 7.58-7.81.

<sup>509</sup> Axione, paragraphs 5.59-5.60; CityFibre, paragraph 7.68; in their responses to the January 2020 Consultation.

<sup>510</sup> TalkTalk response to the January 2020 Consultation, paragraph 5.123.

- 7.83 We acknowledge that there is a risk that Openreach could use targeted connection discounts to deter entry. However, we do not think that allowing Openreach the flexibility to use connection discounts will have a large impact because:
- a) Openreach is already discounting connection charges across a significant part of the FTTP footprint. In the short term, alternative networks will need to compete on this basis ([§]).
  - b) Over the longer term, connection charges for FTTP 40/10 will be zero for premises with an active Openreach connection when price regulation moves to the FTTP anchor product (see Volume 4 Section 5).
  - c) ISPs will not just look at connection prices when choosing an access provider – rentals and other factors are likely to weigh significantly.
- 7.84 We discuss these points further below.
- 7.85 Openreach’s most recent ‘FTTP only offer v2’<sup>511</sup> offers connection discounts of up to 100% for a limited time period on a widespread basis across its fibre first towns and cities programme which are or will be ready for service up to 31 August 2021.<sup>512</sup> This discounting appears to have the objective of incentivising FTTP take-up (which is indicated in Openreach’s internal papers),<sup>513</sup> rather than being specifically targeted at areas where alternative networks are currently building.
- 7.86 [§].<sup>514</sup> [§].<sup>515</sup> [§].<sup>516</sup> [§].<sup>517</sup>
- 7.87 Over the longer term, as part of the copper retirement, we have decided that the connection charge for FTTP 40/10 should be regulated to zero for existing Openreach premises. Access seekers will anticipate a zero connection charge for mass migrations to FTTP 40/10, and alternative operators will need to respond to this regardless of any regulation of geographic discounts.
- 7.88 Finally, we note that access seekers will consider many factors when choosing an access provider. Connection charges are one aspect, along with rental charges and other factors (e.g. systems integration, size of network footprint etc). Over the longer-term recurring rentals will be a more significant element of total cost than connections. CityFibre argued that a zero connection fee on FTTP 40/10 products represented a 22% discount on Openreach’s pricing over a two-year lifetime. However, this uses list pricing and ignores

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<sup>511</sup> Offer pricing is available on the [Openreach price list](#), [accessed 11 March 2021].

<sup>512</sup> This excludes BDUK premises, new sites and FTTP build that occurred prior to July 2018.

<sup>513</sup> Openreach internal governance papers titled Fibre Cities Offer – FTTP only on new connections (2/12/19) and FTTP-Only offer extension (27/7/2020) submitted to the Openreach Commercial Policy and Pricing Board. Both noted “increased FTTP adoption” and “underpinning the FTTP business case” among the benefits of the FTTP offer. Openreach response dated 10 September 2020 to the s.135 notice dated 20 August 2020, Q4b.

<sup>514</sup> [§]. CityFibre response dated 18 August 2020 to the s.135 notice dated 21 July 2020, tranche 3 – part 1, page 41.

<sup>515</sup> [§]. CityFibre response dated 11 September 2019 to the s.135 notice dated 5 September 2019, Explanatory Note to s.135 Notice, page 4. [§]. CityFibre response dated 18 August 2020 to the s.135 notice dated 21 July 2020, tranche 3 – part 1, page 41.

<sup>516</sup> CityFibre response dated 1 October 2020 to the s.135 notice dated 21 July 2020, Annex 2.

<sup>517</sup> CityFibre response dated 22 February 2021 to Q1 of the s.135 notice dated 16 February 2021.

the fact that Openreach is already offering significant connection discounts on a widespread basis to incentivise take-up (meaning that connection fees are a smaller proportion of the total cost in reality).<sup>518</sup>

- 7.89 Overall, we do not think that allowing Openreach the flexibility to use connection discounts will have a large impact on alternative networks for the reasons set out above. If Openreach did charge higher connection charges, access seekers may simply wait for mass migrations (with zero connection) to move customers to FTTP. Consequently, we have decided that the geographic discrimination prohibition should not be extended to include ancillary charges.

## Services that the geographic discrimination prohibition will apply to

### VULA except FTTP

- 7.90 In the January 2020 Consultation we proposed to prohibit Openreach from using geographic discounts for VULA except FTTP in each of Area 2 and Area 3.

### Stakeholder responses

- 7.91 Most stakeholders that commented agreed with these proposals.<sup>519</sup> BT Group and Openreach argued that the remedy should be limited to Area 2.<sup>520</sup> BT Group said there were more benefits than harms in allowing Openreach flexibility to compete.<sup>521</sup>

### Our analysis and conclusions

- 7.92 We have decided to prohibit Openreach from using geographic discounts for VULA in each of Area 2 and Area 3.
- 7.93 We remain of the view that there is likely to be potential for material and sustainable competition to Openreach in the commercial deployment of competing networks in Area 2. We consider that a prohibition on geographic discounts is necessary to prevent Openreach from deterring rollout in this area.<sup>522</sup>
- 7.94 In Area 3 there is unlikely to be potential for material and sustainable competition to Openreach in the commercial deployment of competing networks, but there is likely to be some rollout. Discounting prices in local areas where alternative networks are starting or planning to deploy could be a very effective way for Openreach to undermine this rollout,

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<sup>518</sup> We also note that CityFibre's example is dependent on assumptions about the customer lifetime which are uncertain for FTTP. In relation to broadband more generally current customer lifetimes tend to be longer than 2 years. Our research shows that 65% of customers have been with their fixed broadband provider for more than 2 years, and 24% more than 10 years. Source: Ofcom, [Switching tracker 2020](#), table 160, Q29B, [accessed 11 March 2021].

<sup>519</sup> Axione, paragraphs 1.32 and 5.55; euNetworks, paragraphs 18-19; Gigaclear, paragraph 89; INCA, paragraph 143; KCOM paragraph 2.15; UKCTA, paragraph 9; Virgin Media, paragraph 2g; Vodafone, Part one, paragraph 5.4; in their responses to January 2020 Consultation.

<sup>520</sup> Openreach, paragraph 4.58; BT Group, paragraph 4.5; in their responses to the January 2020.

<sup>521</sup> BT Group response to the January 2020 Consultation, paragraphs 4.5-4.6.

<sup>522</sup> Where we remove the charge control obligations on FTTC in support of copper retirement, we will also remove the prohibition on geographic discounting with respect to the provision on FTTC. See Section 2.

particularly given that some VULA services e.g. FTTC are already available at most premises. We believe that Openreach would still have an incentive to do this to deter any alternative network roll out, even if it is not expected to result in material and sustainable competition.

- 7.95 BT Group argues that Openreach needs flexibility for pricing in Area 3. However, it has not explained what legitimate purpose such an approach would pursue, and we consider that the main reason for adopting such an approach during the period of the market review would be to undermine entry. We also note that we are not aware that Openreach has applied geographic discounts to these services in the past. As explained above, we consider there is a risk that Openreach uses geographic pricing to deter entry in Area 3, while we consider the cost associated with our proposals (in terms of reduced pricing flexibility) is low and the benefits are potentially large because they could promote alternative network rollout in Area 3. We therefore remain of the view that the prohibition on geographic discounts is proportionate and should also apply in Area 3.
- 7.96 The uniform pricing requirements would apply separately to each geographic market (i.e. Openreach could apply a different uniform price in each of Area 2 and Area 3).
- 7.97 The benefit of this provision could be undermined if Openreach were able to target price reductions on services currently used alongside these services, i.e. MPF. The restriction therefore will also apply to MPF when used in combination with VULA.

## FTTP

- 7.98 In the January 2020 Consultation we proposed to prohibit geographic discounts for FTTP in Area 2 but not in Area 3. In July 2020 we consulted on our approach to pricing wholesale access in Area 3 and proposed to apply a prohibition on geographic discounts on rental changes for FTTP in Area 3. This reflected responses to the January 2020 consultation, in which alternative providers indicated that they have ambitions to build in Area 3 and that Openreach could use geographic discounts to deter this build.

## Stakeholder responses

- 7.99 In response to the January 2020 Consultation, CityFibre, Axione, INCA, Jurassic, KCOM, Swish, TalkTalk and Virgin Media agreed with our proposals to prohibit geographic discounts for FTTP in Area 2.<sup>523</sup> Most stakeholders that commented on this issue agreed with our July 2020 proposal to extend the prohibition on geographic pricing to include FTTP rentals in Area 3.<sup>524</sup>

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<sup>523</sup> CityFibre, paragraph 7.52, Axione, paragraphs 5.55-5.56, euNetworks, paragraphs 18-19; INCA, paragraph 143; [Jurassic](#), page 2; KCOM, paragraph 2.15; Swish, paragraph 21; TalkTalk, paragraph 5.123; Virgin Media, paragraph 68; in their responses to the January 2020 Consultation.

<sup>524</sup> [Axione](#), paragraph 4.3; [BUUK](#), page 2; [County Broadband](#), paragraph 59; [Gigaclear](#), page 3; [KCOM](#), paragraph 1.9; [Zzoomm](#), paragraph 60; [INCA](#), page 11, [Virgin Media](#), page 5; and [CityFibre](#), paragraph 3.41; in their responses to the July 2020 Consultation.

- 7.100 BT Group and Openreach disagreed with our proposals in relation to FTTP, arguing that the remedy was not justified because:<sup>525</sup>
- a) Openreach does not have SMP in ultrafast services.<sup>526</sup>
  - b) Openreach needs pricing flexibility to encourage migration to FTTP, reflect local costs and demand conditions.<sup>527</sup>
  - c) The restrictions unfairly hinder Openreach's ability to compete with others and could hinder its investment in fibre.<sup>528</sup>

### Our analysis and conclusions

- 7.101 We have decided to prohibit Openreach from using geographic discounts for FTTP in each of Area 2 and Area 3.
- 7.102 We disagree with BT Group's assertion that Openreach does not have SMP in relation to ultrafast services, as discussed in Volume 2 Section 8.
- 7.103 There is likely to be potential for material and sustainable competition to Openreach in the commercial deployment of competing networks in Area 2, and we anticipate that Openreach and new build FTTP networks will overlap in some areas. Openreach may have an incentive to discriminate using local geographic pricing in response to this competitive threat. Openreach using targeted geographic pricing in this way is precisely our concern i.e. it could undermine new network build and curb wider investment plans. We accept that our regulation will reduce Openreach's commercial flexibility over this review period. However, we consider that our strategy will lead to greater network competition in the long term to the benefit of consumers.
- 7.104 In Area 3 there is unlikely to be potential for material and sustainable competition to Openreach in the commercial deployment of competing networks, but there is likely to be some rollout, and this could benefit consumers through greater choice and competition. If we do not impose a prohibition on geographic pricing in Area 3 then Openreach could use targeted discriminatory pricing to undermine this rollout and deprive consumers of these potential benefits. We believe that Openreach would still have an incentive to do this to deter any alternative network roll out, even if it is not expected to result in material and sustainable competition.
- 7.105 We recognise that Openreach will want to compete with Virgin Media. The uniform pricing requirements apply separately to each geographic market (i.e. Openreach could apply a different uniform price in each of Area 2 and Area 3). As discussed above, Openreach could compete with Virgin Media by offering a uniform price across Area 2.

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<sup>525</sup> BT Group response to the January 2020 Consultation, paragraphs 4.13-4.30. BT Group response to the July 2020 Consultation, paragraphs 3.25-3.27

<sup>526</sup> Openreach response to the January 2020 Consultation, paragraph 4.48.

<sup>527</sup> Openreach response to the January 2020 Consultation, paragraphs 4.49-4.50. Openreach response to the July 2020 Consultation, paragraph 2.43.

<sup>528</sup> Openreach response to the January 2020 Consultation, paragraph 4.66. [Openreach](#) response to the July 2020 Consultation, paragraph 2.44

7.106 Openreach will be able to use the consent process to request use of rental discounts. In addition, as discussed above, we are allowing Openreach pricing flexibility in relation to connection charges which it can use to encourage migration to FTTP. Below we note possible ways that Openreach may be able to use geographic pricing to encourage migration to FTTP (subject to consent).

## Leased lines

7.107 In the January 2020 Consultation we proposed to prohibit geographic pricing for Ethernet and WDM services in the LL Access Area 2 market but not in the LL Access Area 3 market.

## Stakeholder responses

7.108 Vodafone, TalkTalk and Three agreed with the prohibition on geographic pricing for leased lines in the LL Access Area 2 market.<sup>529</sup>

7.109 Openreach and BT Group argued that the prohibition on geographic pricing should not apply to leased lines at all.<sup>530</sup> They argued that our rules would put Openreach at a disadvantage because:

- a) Leased lines markets have bespoke local tenders resulting in geographic variation in price.<sup>531</sup> Openreach said the timeframe for obtaining consent could prevent it from submitting bids for some tenders which could reduce competition. BT Group noted some tenders have a 4-6 week turnaround period.<sup>532</sup>
- b) BT Group and Openreach argued that the disclosure of pricing through the consent process could lead to price following and dampen competition.<sup>533</sup>

7.110 Openreach argued that we have not adequately considered buyer power or the impact of competitive tendering leading to greater competition in relation to leased lines.<sup>534</sup>

7.111 Openreach said we had not explained or provided evidence why the restrictions on geographic pricing for leased lines were necessary in addition to restrictions on WLA services.<sup>535</sup> It said it carries out its own assessment to ensure any commercial arrangement is compliant with its SMP obligations and competition law. BT Group said we had not explained why the charge control on leased lines is insufficient to meet our objectives.<sup>536</sup>

7.112 Axione argued that the prohibition on geographic discounts for leased lines should also apply in Area 3.<sup>537</sup> It said that alternative networks need to access both broadband and leased line markets in Area 3 and geographic discounts would be a low cost way for

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<sup>529</sup> Vodafone, Part 2, paragraph 6.23; Three, paragraph 14.2; TalkTalk, paragraphs 7.165 (table 7.5) and 7.17; in their responses to the January 2020 Consultation.

<sup>530</sup> BT Group, paragraph 4.5; Openreach, paragraph 4.55; in their responses to the January 2020 Consultation.

<sup>531</sup> Openreach response to the January 2020 Consultation, paragraph 4.56.

<sup>532</sup> BT Group response to the January 2020 Consultation, paragraphs 4.44-4.45.

<sup>533</sup> BT Group, paragraph 4.42; Openreach paragraph, 4.57; in their responses to the January 2020 Consultation.

<sup>534</sup> Openreach response to the January 2020 Consultation, paragraph 4.20.

<sup>535</sup> Openreach response to the January 2020 Consultation, paragraph 4.38c.

<sup>536</sup> BT Group response to the January 2020 Consultation, paragraph 4.37.

<sup>537</sup> Axione response to the July 2020 Consultation, paragraph 4.5.

Openreach to deter entry.<sup>538</sup> Axione argued that Openreach faces limited leased line competition in Area 3 so it was unclear what legitimate reasons there could be for geographic discounts.<sup>539</sup>

- 7.113 TalkTalk argued that the prohibition on geographic discounts should apply to any leased line market where there is SMP.<sup>540</sup> It considered there may be pockets of or borderline SMP in the CLA and the HNR Area.<sup>541</sup>
- 7.114 Three considered that the prohibition should be extended to the HNR Area to encourage competitive network build.<sup>542</sup> It suggested that [X%] of sites in the HNR Area have no existing or planned competitive network build. It suggested an additional geographic market '2.5' (which would include some of the CLA and the HNR Area) where the prohibition on geographic discounts should apply for leased lines.<sup>543</sup>

### Our analysis and conclusions

- 7.115 We have decided to prohibit geographic pricing for Ethernet and WDM services in the LL Access Area 2 market, but not in the LL Access Area 3 market.
- 7.116 As discussed at Volume 2 Section 7, we see potential for material and sustainable competition to Openreach in the commercial deployment of competing networks in Area 2. These networks could provide a range of services including broadband and leased lines. We consider Openreach could use discriminatory geographic discounts on leased lines where alternative network operators are rolling out - undermining alternative network investment. We note there may be some differences in the market dynamics of leased lines compared to WLA, such as greater use of competitive tendering. However, this does not mitigate Openreach's incentive to use discriminatory geographic pricing to deter alternative network rollout. We do not agree with Openreach/BT Group that the current regulation of leased lines would be sufficient to address our concerns because it does not prevent geographic pricing.
- 7.117 Openreach has introduced geographic discounts in the CLA (which it also calls the 'FlexZone') and the HNR Area (which it calls the 'Gigabit Drop Zones').<sup>544</sup> We are not applying the prohibition on geographic pricing in the CLA or the HNR Area, recognising that there is greater infrastructure competition here. Openreach has not provided evidence that it has used geographic discounts for rentals outside the CLA and the HNR Area in the past. Nor are we aware of Openreach currently using geographic pricing for leased line rentals within LL Access Area 2 (even absent a prohibition on geographic pricing).<sup>545</sup>

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<sup>538</sup> Axione response to the January 2020 Consultation, paragraphs 5.73-5.74.

<sup>539</sup> Axione response to the January 2020 Consultation, paragraph 5.75.

<sup>540</sup> TalkTalk response to the January 2020 Consultation, table 7.5.

<sup>541</sup> TalkTalk response to the January 2020 Consultation, paragraphs 6.167-6.170.

<sup>542</sup> Three response to the January 2020 Consultation, paragraphs 14.3-14.4.

<sup>543</sup> Three response to the January 2020 Consultation, Table 2, 9.5 and 10.9.

<sup>544</sup> The Gigabit Drop Zones incorporate the CLA. See Openreach website for details at <https://www.openreach.co.uk/orgp/home/products/flexzone/flexzone.do> [accessed 11 March 2021].

<sup>545</sup> Based on a review of Openreach's ethernet pricing on its website <https://www.openreach.co.uk/orgp/home/products/pricing/loadPricing.do> [accessed 11 March 2021].

Openreach appears able to respond to competitive tendering currently without using geographic pricing – therefore it is not clear to us that the consent process will have a material impact on its ability to respond to competitive tenders. In addition, there is a minimum 28 day pricing notification obligation for introducing new offers, meaning that the market is made aware of such offers in advance. It is not clear that the consent process will materially increase the risk of price following.

- 7.118 TalkTalk and Three argued that the prohibition of geographic pricing for leased line rentals should be extended to parts of the CLA or the HNR Area. As discussed in Volume 2 we have concluded that the CLA is effectively competitive.
- 7.119 The HNR Area already have significant presence of alternative leased line networks. Imposing a prohibition on geographic discounts in these areas could impede Openreach’s ability to compete with established competitors and deprive consumers of the benefits of that competition. Therefore, we are not applying the prohibition on geographic discounts to rentals for leased line services in the HNR Area.
- 7.120 Openreach could in theory use geographic discounts for leased lines in the LL Access Area 3 market to deter alternative network rollout. However, we do not think this will be a strong focus for alternative networks given that Area 3 is largely rural, and we do not anticipate there would be significant demand for alternative suppliers of leased lines in practice. As discussed above, we have extended the prohibition on geographic discounts for FTTP because alternative networks have indicated plans for FTTP build in Area 3. We do not think that it would be proportionate on the basis of our current market analysis to extend the prohibition on geographic discounts for leased lines to the LL Access Area 3 market.

## Product variants

- 7.121 In the January 2020 Consultation, we proposed that the geographic discrimination prohibition should apply to all product variants.

## Stakeholder comments

- 7.122 No stakeholders commented explicitly on this issue.

## Our analysis and conclusions

- 7.123 We have decided to apply the geographic discrimination prohibition to all product variants rather than a subset (potentially with different approaches for each of the different technologies and products). If we only applied the restriction to a subset of products, then Openreach would have greater pricing flexibility. However, we consider that this would undermine the effectiveness of the remedy because Openreach could use geographic discounts on the unrestricted products to deter alternative rollout. Therefore, we consider it appropriate to apply the geographic discrimination prohibition to all product variants.

## Granting consent for geographic price variations

7.124 In the January 2020 Consultation we noted that there may be circumstances where geographic discounts are beneficial. We proposed a process whereby Openreach can request consent to vary prices geographically that would otherwise be prevented.

### Stakeholder responses

- 7.125 Openreach, BT Group, CityFibre, Axione, Gigaclear and INCA requested further clarity/guidance over what types of geographic pricing might be granted consent. CityFibre said more certainty and transparency was needed to provide alternative networks with confidence to invest.<sup>546</sup> Virgin Media said we should consult in every case.<sup>547</sup>
- 7.126 Openreach and BT Group argued that consent should not be required when it is using geographic prices targeted at established players or where there is no prospect of emerging competition.<sup>548</sup> Openreach considered that the consent process would place a heavy burden on it to justify any geographic discount and reduce its agility.<sup>549</sup>
- 7.127 Axione asked whether differences in geographic costs were a reason for different geographic prices, and what justification for differential geographic pricing would be acceptable.<sup>550</sup> BT Group considered that Openreach should be able to offer cost reflective prices, including by geography.<sup>551</sup>
- 7.128 Gigaclear considered that network operators active in areas where Openreach requested consent for geographic pricing should be informed, so they can provide Ofcom with relevant information to feed into the consent assessment.<sup>552</sup>

### Our analysis and conclusions

- 7.129 Consistent with our proposal in the January 2020 Consultation, we have decided to include in the non-discrimination SMP condition we are imposing a provision which enables Ofcom to consent in writing to geographic price differentiation which would otherwise be prohibited by the geographic pricing prohibition. In assessing whether to consent to differential geographic pricing we would consider:
- any objective justification provided by Openreach for the differential pricing; and
  - whether it is consistent with our overarching policy objectives (including our strategy to promote network competition).

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<sup>546</sup> CityFibre response to the January 2020 Consultation, paragraphs 7.83-7.85.

<sup>547</sup> Virgin Media response to the January 2020 Consultation, paragraph 86.

<sup>548</sup> BT Group, paragraph 4.7; Openreach paragraph 4.47; in their responses to the January 2020 Consultation. Openreach response to the July 2020 Consultation, paragraph 2.43.

<sup>549</sup> Openreach response to the January 2020 Consultation, paragraph 4.30. Openreach response to the July 2020 Consultation, paragraph 2.45

<sup>550</sup> Axione response to the January 2020 Consultation, paragraphs 5.65-5.66.

<sup>551</sup> BT Group response to the January 2020 Consultation, paragraph 4.4.

<sup>552</sup> Gigaclear response to the July 2020 Consultation, page 3.

- 7.130 We would expect Openreach to explain the purpose of the scheme and why it will not deter new alternative network build. We would be happy to discuss with Openreach any specific initiatives that it is considering.

*Additional guidance*

- 7.131 We recognise that stakeholders would like further guidance on the types of geographic pricing that might be eligible for consent. It is very difficult for us to provide guidance in this respect given the wide range of possible pricing initiatives that Openreach could propose (i.e. it is not possible for us to cover every eventuality). Nevertheless, we have provided some indications of the types of pricing that might be eligible for consent to aid clarity. When preparing this guidance, we have considered the requests, suggestions and examples provided by stakeholders and reflected these where appropriate.
- 7.132 The guidance we have provided below primarily relates to how Openreach competes with alternative operators building new network (rather than established networks). Our strategic approach is to encourage network competition, and our primary consideration in deciding whether to consent to geographic pricing is whether there could be a detrimental impact on new network build/incentives to build.
- 7.133 We will consider any scheme proposed by Openreach on a case-by-case basis reflecting the context and circumstances – we will not necessarily consent to a new scheme because Openreach has done something similar before. This guidance does not fetter our discretion and it does not impact the wider application of competition law to Openreach.

*Copper retirement*

- 7.134 We recognise that as Openreach builds out an FTTP network, it will want to retire its copper network. As explained in Section 2, our copper retirement policy aims to promote full fibre investment by shifting the focus of regulation from copper to full fibre and support the migration to full fibre services. To this end we may consent to geographic pricing that supports migration to full fibre, where this is applied in all areas of roll out, but in practice has a geographic element due to the timing of FTTP build in each exchange.
- 7.135 For example, we might consent to Openreach applying a discount to some FTTP service rentals for a specific time period once it has reached a threshold (e.g. the 75% stop-sell point) coverage in each exchange. One of the factors we would take into account is the geographic footprint of the discount: we would expect such a scheme to be implemented in every qualifying exchange, and would not expect to consent to a scheme where the discount (by design or in effect) only or mainly applied to exchanges where new network had been built/was anticipated. We would expect Openreach to explain how any scheme was supporting its copper migration.

*Variation in geographic costs*

- 7.136 Openreach and Axione requested clarification on whether geographic prices are permissible that reflect differences in geographic costs. While we will consider any scheme on a case-by-case basis, this may be permissible where:
- It is not targeted in areas of competitive network build (current or prospective).

- Openreach can provide clear evidence of the differences in cost of provision.
- Openreach applies any cost reflective pricing to all areas in an open and transparent manner. In particular, all areas with similar geographic costs are offered the same geographic price (we would be unlikely to consent to a proposal which allowed Openreach to pick and choose the areas where cost differences are reflected in prices).

#### *Established competitors and other carve outs*

- 7.137 Openreach considered that it should not have to request consent when competing with established competitors. As explained above, our competition concerns primarily relate to new network build. However, we would be concerned if, e.g. though competing with Virgin Media in its established footprint, Openreach inadvertently undermined new network build. The consent process allows us to assess whether geographic pricing by Openreach would have an impact on new network build before it is implemented.
- 7.138 As noted above, the Virgin Media footprint closely corresponds to Area 2, so Openreach is free to reduce its price across the Virgin footprint (by reducing its price across the whole of Area 2) while complying with the prohibition on geographic pricing. In addition, the prohibition on geographic pricing for leased lines does not apply in the CLA and the HNR Area.
- 7.139 We do not think that it is appropriate to disapply the geographic pricing prohibition, as Openreach suggests, in areas where there is no prospect of new network build. Network build plans evolve over time and it is not possible to know exactly where alternative networks will build in the future. We are in a better position to assess the impact of any proposed geographic pricing through consultation with relevant stakeholders when Openreach submits a consent request.

#### *Consent process*

- 7.140 We provide additional information on the consent process in Annex 11. Where we consult we would expect to do so for one month.<sup>553</sup> Therefore, we would expect the process to be relatively short. The consent process does not represent an onerous requirement for Openreach, as it will need to prepare materials that explain any proposed geographic based discount scheme for its own internal purposes and for its customers. As discussed in Section 3, Openreach is required to give either 28 or 90 days' notice (depending on the type of pricing change) before introducing a price reduction under SMP Condition 8 and so there is already transparency regarding its price changes.

## **Existing geographic pricing**

### **Stakeholder responses**

- 7.141 CityFibre asked us to look at Openreach's local marketing offer and FTTP selected trial offers which include geographic pricing for FTTP services.<sup>554</sup> [X].

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<sup>553</sup> We would consider our statutory obligation to consult under s.49A CA03.

<sup>554</sup> CityFibre response to the January 2020 Consultation, paragraph 7.27

7.142 Openreach considered that existing geographic pricing should be excluded from the rules.<sup>555</sup> [redacted].<sup>556</sup>

### **Our analysis and conclusions**

7.143 Openreach suggested that any existing offers should be exempt from the rules. As set out above, we will consider all offers on a case-by-case basis and do not consider that a general exemption would therefore be appropriate.

7.144 We have issued a separate consultation on certain named offers already in force which result in geographic variations in price, which explains that we are minded to grant Openreach consent for these. In order to avoid disruption to the market in the period between this consultation and any decision on whether or not to grant a consent, we have decided to make a temporary exemption to the geographic prohibition for four months for these named offers at SMP Condition 4.8 so that Openreach does not have to disapply them from 1 April 2021. This will either provide for continuity or allow for an orderly withdrawal of these offers, depending on the outcome of our consent consultation.

7.145 Our consent consultation does not consider the FTTP selected trial offer mentioned by CityFibre because this has already finished and does not require a consent.

### **Form of ex ante regulation – other commercial terms**

7.146 In the January 2020 Consultation we considered two options; i) explicitly prohibit specific commercial terms which could deter alternative network rollout (unless we consent) or ii) use our powers under SMP conditions to intervene to prohibit commercial terms which we consider would deter alternative network rollout where these arose. Under option two, to facilitate us considering terms that may be problematic, we proposed to adopt a 90-day notification period for commercial terms where the price or other contractual conditions are conditional on the volume and/or range of services purchased. This would allow us time to investigate relevant commercial terms that Openreach proposed before they come into force. We proposed to adopt option 2.

7.147 CityFibre agreed with our proposals. TalkTalk, Axione, Vodafone and euNetworks appear to suggest that we should impose more stringent regulation. Openreach and BT Group disagreed with our approach.

7.148 We discuss stakeholder comments and our response in more detail below. In summary, we remain concerned that Openreach could use other commercial terms to discourage access seekers from switching to alternative providers.<sup>557</sup> We have decided to consider proposed

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<sup>555</sup> Openreach response to the January 2020 Consultation, paragraphs 4.54 and 4.58; Openreach response to the July 2020 Consultation, paragraph 2.46.

<sup>556</sup> [redacted] [A confidential respondent], response to the January 2020 Consultation, page 5.

<sup>557</sup> For the avoidance of doubt, we recognise that these commercial terms could include both price and non-price terms.

commercial terms that may deter new network build as they are notified by Openreach.<sup>558</sup> Where necessary we will intervene to prevent such terms, including through our direction making powers under SMP Conditions. We have identified loyalty inducing terms e.g. pricing contingent on large volume commitments as a particular concern. To facilitate us considering such terms, Openreach is required to provide 90 days' notification of commercial terms where the price or other contractual conditions are conditional on the volume and/or range of services. This applies to all the products and geographic markets where we have found that BT has SMP in this review excluding PIA and IEC (i.e. for all WLA and leased line markets).

- 7.149 In response to stakeholder comments we have provided further guidance on the types of commercial terms that might be (un)acceptable below.

## Outright ban on specific commercial terms

### Stakeholder responses

- 7.150 Some stakeholders favoured stronger measures than those we proposed.<sup>559</sup> Vodafone and TalkTalk said we should explicitly prohibit specific types of discounts.<sup>560</sup>
- 7.151 Openreach and CityFibre agreed that we should not impose an upfront prohibition.<sup>561</sup>

### Our analysis and conclusions

- 7.152 We have considered whether we should prohibit specific types of commercial arrangements which may be expected to deter alternative network rollout. We recognise that an up-front prohibition could give greater certainty that the commercial arrangements would not be applied. However, we also consider that allowing Openreach some flexibility on commercial terms may have benefits, and a ban may deter Openreach from bringing forward commercial terms that ultimately benefit consumers. There would also be practical difficulties in identifying in advance all the structures that could deter alternative network build and specifically prohibiting these, with the potential for Openreach to game the rules (designing structures to get around any specific prohibition). More clarity might be achieved with a very broad definition of possible commercial terms but, the broader the definition, the more likely that an upfront prohibition would inadvertently impact on desirable commercial arrangements and in doing so be disproportionate.
- 7.153 Instead, we propose to consider such terms as they are notified by Openreach and in this context we have sought to provide greater clarity through guidance on the types of terms that would be acceptable or unacceptable, as discussed below. We consider that our

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<sup>558</sup> We have adopted a 90 day notification for commercial terms where the price or other contractual conditions are conditional on the volume and/or range of services. Other types of pricing/commercial terms that may deter new network build may also be considered as notified by Openreach under the Access Change Notice.

<sup>559</sup> Axione, paragraphs 5.50-5.52; euNetworks, paragraph 19; in their responses to the January 2020 Consultation.

<sup>560</sup> TalkTalk, paragraph 5.123; Vodafone Part one, paragraph 5.9; in their responses to the January 2020 Consultation.

<sup>561</sup> Openreach, paragraph 4.73; CityFibre paragraph, 7.12; in their responses to the January 2020 Consultation.

approach will be effective in preventing Openreach introducing commercial terms which undermine new network build.

## Analytical framework

- 7.154 In the consultation we set out a proposed analytical framework for considering other commercial terms. Our starting point was that the creation of any barrier to using alternative network operators would only be justified where:
- a) the impact on nascent network competitors is unlikely to be material; and
  - b) the arrangements will generate clear and demonstrable benefits, such as:
    - i) the arrangements are essential to Openreach's business case for fibre roll-out; or
    - ii) the arrangements are necessary to offer more efficient prices that would deliver benefits for consumers.

## Stakeholder responses

- 7.155 BT and Openreach asked for greater clarity regarding the proposed analytical framework. They questioned whether Openreach should have to show that commercial terms had both no material impact on nascent network competitors and clear and demonstrable benefits.<sup>562</sup> Openreach considered the requirements were not proportionate and went beyond competition law, which was not justified or necessary.<sup>563</sup> It considered that the burden should be on Ofcom to demonstrate that any commercial terms amount to foreclosure.<sup>564</sup> BT Group wanted to know what would constitute a 'material' impact on nascent competitors or a business case being 'undermined'.<sup>565</sup> BT Group noted that all competition would reduce returns to new fibre networks.<sup>566</sup>
- 7.156 Openreach and BT Group said that we should rely on competition law principles.<sup>567</sup> BT Group said that pricing with a loyalty inducement should be allowed if the price is above long run average incremental cost (which it considered to be consistent with EC guidance).<sup>568</sup> It said that allowing Openreach flexibility to compete would be more likely to result in benefit than harm.<sup>569</sup>
- 7.157 Openreach considered that our proposals were inconsistent with promoting regulatory certainty because it was unclear what deals would be permissible under our analytical framework.<sup>570</sup> [redacted].<sup>571</sup>

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<sup>562</sup> BT Group, paragraph 4.58; Openreach paragraph, 4.69; in their responses to the January 2020 Consultation.

<sup>563</sup> Openreach response to the January 2020 Consultation, paragraph 4.68a.

<sup>564</sup> Openreach response to the January 2020 Consultation, paragraph 4.68c.

<sup>565</sup> BT Group response to the January 2020 Consultation, paragraph 4.59.

<sup>566</sup> BT Group response to the January 2020 Consultation, paragraph 4.60.

<sup>567</sup> Openreach, paragraph 4.11; BT Group, paragraph 4.55-4.56; in their responses to the January 2020 Consultation.

<sup>568</sup> BT Group response to the January 2020 Consultation, paragraph 4.57.

<sup>569</sup> BT Group response to the January 2020 Consultation, paragraph 4.6 and 4.13.

<sup>570</sup> Openreach response to the January 2020 Consultation, paragraph 4.68b.

<sup>571</sup> Openreach response to the January 2020 Consultation, paragraph 4.68d

7.158 Openreach argued that we needed to undertake an impact assessment of our proposal (taking into account any negative effects such as higher prices).<sup>572</sup> It said we should consider future benefits from volume contingent terms.<sup>573</sup>

### Our analysis and conclusions

7.159 Our objective is to promote investment in gigabit-capable networks by Openreach and other operators in order to promote network-based competition, and this will be our guiding principle in assessing commercial terms proposed by Openreach. Our key concern is commercial terms that could undermine investor confidence in new network build and impact rollout plans e.g. by discouraging access seekers from switching demand to alternative networks. Given this, it is appropriate that our analytical framework is concerned with the promotion of competition rather than the protection of competition as under competition law.

7.160 If Openreach proposes commercial terms which clearly have no impact on access seekers incentives to use alternative networks, then they are unlikely to be a concern. If Openreach proposes commercial terms that potentially create a barrier to using alternative networks, then we will apply the framework set out in paragraph 7.154. Commercial terms that have a material detrimental impact on competitive network build are unlikely to be justified. Where the commercial terms constitute some barrier to access seekers using new alternative networks, but the effect is unlikely to be material, we will consider the purpose and potential benefits of the terms. While it will be for Ofcom to establish that the terms create a barrier to using alternative networks, in practice it is likely to assist our analysis if Openreach explains (i) any impact it thinks the commercial terms may have on alternative networks and why it considers this is justified and (ii) the rationale and/or anticipated benefits of the arrangements. This will help us to make an informed decision when evaluating whether to use our *ex ante* powers. The benefits should be clear and demonstrable, and it would be helpful if Openreach explains the extent to which these will accrue to consumers. For example:

- a) Why the arrangements are essential to achieving fibre rollout. We will consider the impact on both Openreach and other operators' fibre rollout (consistent with our policy objective). With respect to Openreach's rollout, we would need to see evidence that the restrictive elements were necessary over and above our copper switchover arrangements which already give BT very powerful levers to achieve migration quickly; and/or
- b) Why the arrangements are necessary to offer more efficient prices that would deliver benefits for consumers. For example, setting low incremental wholesale charges to customers for higher quality products. We would evaluate these benefits recognising that more efficient pricing structures of this type often can be achieved in a variety of

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<sup>572</sup> Openreach response to the January 2020 Consultation, paragraph 4.67.

<sup>573</sup> Openreach response to the January 2020 Consultation, paragraph 4.63-4.65.

ways that need not require large volume commitments on the part of wholesale customers.

- 7.161 If Openreach proposes commercial terms which we decide to use our *ex ante* powers to prevent coming into force, then we will clearly set out our reasons for doing so, including the anticipated harm from the terms. In addition, we will set out how the intervention meets our legal tests.
- 7.162 We do not consider, as suggested by Openreach, that our policy is inconsistent with the principles of regulatory certainty. We have clearly articulated our policy objective and concerns, and provide guidance below as to some types of commercial terms that may be problematic. Additionally, as we set out above, our willingness to use *ex ante* regulation (rather than relying on *ex post* competition law) will give alternative network investors more confidence, and market participants greater clarity and certainty.

## Further guidance

### Stakeholder responses

- 7.163 A number of stakeholders asked for more guidance/clarity around, commercial terms that would be acceptable/unacceptable.<sup>574</sup> Some stakeholders made specific suggestions about the points we could address in guidance:
- a) Retroactive rebates (CityFibre, Vodafone).<sup>575</sup>
  - b) Commitments which restrict access seeker use of an alternative providers (CityFibre, Virgin Media).<sup>576</sup>
  - c) Volumes discounts that do not lead to cost savings/amount to predatory pricing/have a loyalty inducing aspect (CityFibre).<sup>577</sup>
  - d) Discount schemes where only certain seekers can access the lowest prices (CityFibre,<sup>578</sup> Vodafone) or that favour BT Group (UKCTA).<sup>579</sup> Vodafone specifically mentioned straight line discounts where only the largest access seekers can qualify for the lowest access prices.<sup>580</sup>
  - e) Stepped discounts (Vodafone).<sup>581</sup>

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<sup>574</sup> CityFibre, Vodafone, Virgin Media, Axione, INCA, UKCTA, BT Group and Openreach responses to the January 2020 Consultation.

<sup>575</sup> CityFibre, paragraph 7.99; Vodafone, Annex 2, page 17; in their responses to the January 2020 Consultation.

<sup>576</sup> CityFibre, paragraph 7.99; Virgin Media, paragraphs 79-81; in their responses to the January 2020 Consultation.

<sup>577</sup> CityFibre response to the January 2020 Consultation, paragraph 7.99.

<sup>578</sup> CityFibre response to the January 2020 Consultation, paragraph 7.99.

<sup>579</sup> UKCTA response to the January 2020 Consultation, paragraph 10.

<sup>580</sup> Vodafone, Part one response to the January 2020 Consultation, paragraph 5.5.

<sup>581</sup> Vodafone, Annex 2 response to the January 2020 Consultation, page 17.

7.164 CityFibre and Vodafone made suggestions for specific processes and guidance that we could adopt.<sup>582</sup> Virgin Media said we should consult in every case.<sup>583</sup>

### **Our analysis and conclusions**

7.165 While any decision on what terms might be acceptable/unacceptable would depend on the specific circumstances, we have sought to provide further guidance on the types of commercial terms that we might consider to be problematic, and it may well be that arrangements that use one or more of the mechanisms outlined above could be caught by our guidance.<sup>584</sup> The points made at paragraph 7.133 also apply here. We have included more detail on the process we will follow, including consultation arrangements, at Annex 11.

#### *Arrangements which penalise ISPs for switching volumes to new networks*

7.166 Arrangements with an element of loyalty inducement which deter ISPs from switching demand to new networks are likely to undermine alternative network expansion and undermine our goal of achieving network competition. Examples of these types of arrangements could include:

- a) Exclusivity discounts (i.e. discounts conditional on the ISP purchasing all or most of its requirements from Openreach).
- b) Retroactive rebates (i.e. where a rebate is applied to all units purchased over a reference period once a certain threshold is reached).
- c) Structures where the price paid in one geographic area depends on whether they purchase from Openreach in another area. For example, a geographic discount on leased line services in Area 3 or the HNR Area that is contingent on maintaining broadband volumes with Openreach in Area 2.
- d) Arrangements whereby a discount on an unregulated service (e.g. leased line products in the CLA) is contingent on purchasing a certain volume and/or mix of regulated services (e.g. FTTC/FTTP).

#### *Arrangements that give preferential treatment targeted at larger ISPs*

7.167 We may be concerned about arrangements which give preferential treatment to certain types of ISP. Our particular concern is terms that ‘tie in’ the largest and most valuable ISPs – encouraging them to stay on the Openreach network and depriving alternative networks of ISPs with the necessary volumes to become viable.

7.168 We note that BT’s non-discrimination obligations (see Section 3) prohibit Openreach from using commercial terms that unduly discriminate between different customers when

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<sup>582</sup> CityFibre and Vodafone, Local access discounts guidance – indicative example, response to the January 2020 Consultation.

<sup>583</sup> Virgin Media response to the January 2020 Consultation, paragraph 86.

<sup>584</sup> With respect to CityFibre’s request for guidance in relation to predatory pricing (paragraphs 7.101 to 7.105 of CityFibre response to the January 2020 Consultation) – we note that this is already prohibited for dominant undertakings under competition law (i.e. we consider this point is already clear).

supplying access services and this would include terms that favour BT's downstream divisions.

#### *Encouraging migration to FTTP*

- 7.169 Openreach may want to consider different commercial terms as part of a strategy to migrate customers from copper to FTTP and support its FTTP business case. As noted above, we may be concerned if such terms deter ISPs from switching to new network builders. We would be less likely to be concerned where use of an alternative network does not affect the prices that an ISP pays for Openreach services.
- 7.170 Openreach has introduced offers which are contingent on achieving a minimum level of average revenue per user (e.g. to encourage migration to higher bandwidth services). We consider that such terms are unlikely to discourage ISPs from using alternative operators.
- 7.171 Both Sky and Openreach noted a desire for long term pricing – and considered that this could help to support the FTTP business case. Long term pricing which is contingent on ISPs making volume or other commitments may be a concern because this could deter switching to new networks. But Openreach can offer long term attractive pricing without exclusivity conditions.

#### *Terms which may have a 'signalling' effect*

- 7.172 We may also be concerned about commercial terms which do not currently impose restrictions on use of alternative networks but may do so in future. For example, commercial terms which allow ISPs to qualify for discounts providing their use and/or the size of alternative networks remains below certain limits. This could constrain the ability of alternative networks to grow and achieve a sustainable size.

## **Existing volume discount offer**

### **Stakeholder responses**

- 7.173 Some stakeholders commented on Openreach's existing 'GEA volume offer'.<sup>585</sup> Under this offer ISPs can benefit from retroactive discounts if they meet volume targets. ISPs can use alternative networks providing the alternative network footprint covers less than 25% of UK premises. CityFibre argued that this limits the contestable market to 25%.<sup>586</sup> [redacted].
- 7.174 [redacted] [A confidential respondent] argued that volume commitments already in place enable Openreach to leverage SMP from the copper to the fibre base.<sup>587</sup> It argued a failure to tackle this would render the market review ineffective. [redacted].<sup>588</sup>

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<sup>585</sup> GEA volume offer pricing is on the [Openreach price list](#), [accessed 11 March 2021].

<sup>586</sup> CityFibre response to the January 2020 Consultation, paragraphs 7.27 and 7.38.

<sup>587</sup> [redacted] [A confidential respondent], response to the January 2020 Consultation, page 7.

<sup>588</sup> [redacted] [A confidential respondent], response to the January 2020 Consultation, page 5.

- 7.175 CityFibre argued that Openreach's offers (including geographic pricing offers mentioned in paragraph 7.141) create general uncertainty about further discounts from Openreach [8]. It said the offers directly undermine the investment incentives of alternative operators.<sup>589</sup>

### Our analysis and conclusions

- 7.176 Under the GEA volume offer, if an ISP acquires fibre connections with a qualifying alternative network provider then the ISP's volume commitment will reduce by the same number of connections.<sup>590</sup> Openreach recently amended the GEA volume offer to remove the limit on the footprint of qualifying alternative network providers.
- 7.177 We note CityFibre's point that the fact that Openreach uses special offers may create an expectation of future offers and a degree of uncertainty around Openreach's future pricing. We consider that the only way to fully allay this concern would be to ban Openreach from using any special offers. As noted above, we have prohibited geographic pricing for VULA in Area 2 and Area 3 and leased lines in the LL Access Area 2 market (unless we explicitly consent). However, we do not think it would be proportionate to ban all special offers for the reasons set out in paragraph 7.152. As discussed above, we have set out further detail on the types of commercial terms that may cause a concern and how we would expect to deal with this.

### 90 day notification period

- 7.178 We proposed to require Openreach to provide 90 days' notice of commercial terms where the price or other contractual conditions are conditional on the volume and/or range of services purchased.

### Stakeholder responses

- 7.179 TalkTalk, Vodafone and UKCTA welcomed the notification period.<sup>591</sup>
- 7.180 Openreach and BT Group considered that the notification period could impact Openreach's ability to respond in a timely way – especially for leased lines where the timescale of a tendering process could be relevant.<sup>592</sup> Openreach argued this would place it at a structural disadvantage.<sup>593</sup> BT Group noted several examples where tender response times were 4-6 weeks.<sup>594</sup>
- 7.181 Openreach and BT Group considered that we should not require 90 days' notice for commercial terms where it can be shown that the impact on nascent network competition is unlikely to be material.<sup>595</sup>

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<sup>589</sup> CityFibre response to the January 2020 Consultation, paragraph 7.28.

<sup>590</sup> See [Openreach website](#) for more detail, [accessed 12 March 2020].

<sup>591</sup> TalkTalk, paragraph 6.89; Vodafone, Part one, paragraph 5.4; UKCTA, paragraph 9; in their responses to the January 2020 Consultation.

<sup>592</sup> BT Group paragraph 4.45; Openreach, paragraph 4.68; in their responses to the January 2020 Consultation.

<sup>593</sup> Openreach response to the January 2020 Consultation, paragraph 4.68d.

<sup>594</sup> BT Group response to the January 2020 Consultation, paragraphs 4.44-4.45.

<sup>595</sup> Openreach, paragraph 4.69; BT Group, paragraph 4.51; in their responses to the January 2020 Consultation.

- 7.182 BT Group and Openreach considered that the price notification/consultation process could lead to softening of competition due to price following, and disclosure requirements would impede Openreach's ability to compete fairly.<sup>596</sup>
- 7.183 Openreach argued that the notification requirement was purporting to be a transparency obligation, but it is actually seeking to control/prevent the prices Openreach can set.<sup>597</sup>
- 7.184 It further argued that the notification requirement was introducing a new condition retrospectively. It appears to argue this because we noted that we could use our existing powers under SMP Conditions to deal with commercial terms which undermine new network rollout, should we choose to do so. It stated that if the powers already exist, there is no need to introduce new SMP Conditions. It argued that we are altering the content of past obligations and we have not addressed the issue of volume discounts in the previous reviews.<sup>598</sup>

### Our analysis and conclusions

- 7.185 We have identified that terms which induce loyalty e.g. Openreach offering lower prices in return for large volume commitments are a particular concern because this could deter access seekers from switching demand to new alternative networks. The 90 day notification helps to address this concern by allowing time to consider (and if necessary use our *ex ante* powers to prevent) arrangements where the price or other contractual conditions are conditional on the volume and/or range of services purchased. The 90 day notification does not capture other pricing arrangements including straightforward connection or rental discounts (or discounts for long term contracts without volume commitments).<sup>599</sup>
- 7.186 Openreach and BT Group argued that the 90 day notification could have a particular impact in relation to leased lines where tender requests can have a 4-6 week turnaround. We have reviewed Openreach's recent special offers for leased lines (as published on its website) and we consider it unlikely that any of these offers would be caught by the 90 day notification.<sup>600</sup> We recognise that the 90 day notification period could, in theory, mean it takes longer for Openreach to bring pricing/offers to the market. However, based on offers to date, the impact is likely to be limited in practice and, to the extent that there is one, justified for the reasons that follow.

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<sup>596</sup> BT Group, paragraphs 4.42-4.43; Openreach, paragraph 4/68d; in their responses to the January 2020 Consultation.

<sup>597</sup> Openreach response to the January 2020 Consultation, paragraphs 4.92-4.94.

<sup>598</sup> Openreach response to the January 2020 Consultation, paragraphs 4.95-4.102.

<sup>599</sup> Although they are subject to separate notification requirements as explained in Section 3. Where Openreach proposes other types of pricing or commercial terms which deter new network build we may consider using *our ex ante* powers to prohibit such terms.

<sup>600</sup> We are aware of a limited number of Openreach ethernet products that have volume related pricing (specifically CIENA 6500 and some ADVA products). This pricing was introduced a number of years ago. In future such pricing would have to be notified, however, given the limited number of instances we do not consider the impact would be significant in practice. CIENA 6500 pricing is available on the [Openreach price list](#), [accessed 11 March 2021]; ADVA pricing is also available on the [Openreach price list](#), [accessed 11 March 2021].

- 7.187 We considered whether it would be possible to have a shorter notification period for leased lines. However, given the time needed to investigate whether volume related terms could harm alternative network rollout (see Annex 11) it is not in our view feasible to have a shorter period.
- 7.188 Outside of leased lines, we have identified one example where Openreach's pricing is contingent on the volume or type of services purchased. This is the GEA volume offer (discussed above). We understand this offer took significant time to negotiate and was not developed in response to a time critical tender. A 90 day notification requirement (had it been in place) would not have had a material impact on Openreach or ISPs.
- 7.189 Where Openreach is making offers which have a volume commitment, this is likely to be something we want to examine (for the reasons set out above). Overall, we consider that the burden and cost placed on Openreach from the 90 day notification is proportionate in the context of the risk that these types of terms could undermine new network build and thwart our policy objective to achieve network competition.
- 7.190 BT Group and Openreach considered that the price notification/consultation process could lead to softening of competition due to price following. The SMP Conditions require BT to provide either 28 or 90 days' notice of price changes.<sup>601</sup> We do not consider that requiring 90 days' notification for a limited set of commercial terms is likely to materially impact competition.
- 7.191 Openreach and BT Group argued that 90 day notification should not apply where the impact of commercial terms of nascent networks is unlikely to be material. We agree that where there is no impact on new networks the commercial terms are unlikely to be problematic. However, it is not possible for us to define what constitutes a 'material impact' on new networks up front. While Openreach may consider that a given volume related commercial term is unlikely to have an impact on a new network build, we may disagree. We need time to consider the terms and consult with relevant parties before they come into effect. As discussed at Annex 11, if our initial investigation suggests that *ex ante* intervention is not required we would indicate this to the market as soon as is practicable to aid certainty.
- 7.192 Openreach suggested the notification period is, in effect, a control on prices. We disagree. The purpose of the notification is to enable us to assess whether specific Openreach offers raise competition concerns. Having assessed the offer, we may ultimately decide to use our existing SMP powers to prevent such terms coming into force.
- 7.193 Openreach suggested that the SMP Condition requiring 90 days notification where the price or other contractual conditions are conditional on the volume and/or range of services purchased was being imposed retrospectively. For the avoidance of doubt, any new regulation we are introducing under this Review will apply on a forward looking basis from 1 April 2021. In the January 2020 Consultation we were not suggesting that the 90

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<sup>601</sup> Excluding the extension of the duration of a Special Offer at the same or a lower price where 1 working day notice is required. See Section 3.

day notification obligation would apply before 1 April 2021, simply that, if necessary, the current SMP conditions could be used to address commercial terms introduced by Openreach that raise competition concerns prior April 2021. We did not need to address volume discounts in previous reviews because the context and policy objectives were different. In previous reviews plans for network rollout by new entrant alternative operators were smaller scale and less clear, and we were less concerned that Openreach would use volume discounts to deter alternative network rollout.

- 7.194 Openreach asked us to clarify what is meant by the ‘range of services’ in relation to the 90 day notification period above.<sup>602</sup> We mean arrangements where the price or contractual conditions are contingent on ISPs purchasing a particular set of services from Openreach (effectively allowing Openreach to leverage across different services). Examples could include where a discount on FTTC pricing is conditional on purchasing FTTP or a discount on (competitive) leased line prices in the CLA is conditional on purchasing WLA services. We are concerned that Openreach could use these types of commercial terms to deter ISPs from switching demand to alternative networks.

## Other issues

### Stakeholder responses

- 7.195 CityFibre and Vodafone suggested some other types of non-pricing strategy that Openreach could use to deter alternative network deployment.<sup>603</sup> They noted:
- a) discriminating in relation to quality of service for ISPs who are customers of nascent competitors;
  - b) designing its own rollout plans primarily to harm nascent competitors rather than in an economically rational manner; or
  - c) using its scale to prevent nascent competitors accessing essential inputs such as contractors.
- 7.196 They suggested we should be alive to these issues and intervene where necessary.

### Our analysis and conclusions

- 7.197 We consider that point (a) is already addressed by our non-discrimination requirements, as discussed in Section 3, and point (c) is outside the scope of this Review.
- 7.198 With respect to point (b), we recognise that Openreach strategically targeting areas where competitors have built or plan to build could be against consumers’ interests if it deterred competitors from further rollout. We are aware of this risk and would consider how to address the issue in the event of allegations of overbuild that prevented competition.

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<sup>602</sup> Meeting with Ofcom 15 October 2020.

<sup>603</sup> CityFibre and Vodafone, Local access discounts guidance – indicative example, response to the January 2020 Consultation, paragraph 5.1-5.4.

## Conclusion

- 7.199 We consider that each of the prohibition on geographic pricing and the requirement to notify terms that are conditional on the volume or range of services are appropriate and proportionate in relation to BT's market power in each of the markets where we impose them.
- a) The prohibition on geographic pricing seeks to prevent discrimination that would adversely affect competition and ultimately cause detriment to citizens and consumers. We consider that our geographic discrimination prohibition represents the minimum required to address our competition concerns.
  - b) The requirement to notify terms that are conditional on the volume or range of services seeks to provide transparency and allows us to consider potential anti-competitive commercial terms that would adversely impact competition and ultimately cause detriment to citizens and consumers. We consider that this requirement is the minimum that is necessary to address our competition concerns and the notification period is the minimum required to reach a view on such commercial terms.
- 7.200 In order to implement the decisions set out above, summarised in paragraphs 7.3-7.6, we are setting SMP Conditions 4.4 to 4.8 and 8.6 in Volume 7. Section 87(6)(a) of the Act authorises the setting of an SMP services condition requiring the dominant provider not to discriminate unduly against particular persons, or against a particular description of persons, in relation to matters connected with network access to the relevant network or with the availability of relevant facilities. Section 87(6)(b) of the Act authorises the setting of an SMP services condition requiring the dominant provider to publish, in such manner as we may direct, all such information as they may direct for the purpose of securing transparency in relation to such matters. In Sections 3 and 5 above we also explain our decisions to impose SMP conditions with certain powers of direction in respect of fair and reasonable terms, conditions and charges, undue discrimination and reference offers.

## 8. Legal tests

8.1 In Sections 2-7 we set out our decisions to require Openreach to provide network access and associated remedies designed to support and make effective that network access. In summary we have decided to impose to the extent set out above the following in each of the physical infrastructure, wholesale local access (WLA Area 2 and WLA Area 3), leased lines access (LL Area 2, LL Area 3 and the HNR Area) and inter-exchange connectivity markets (BT Only exchanges and BT+1 exchanges, and for a transitional period BT+2 exchanges):

- Requirement to provide network access on reasonable request;
- Requirement to publish and operate a process for requests for new forms of network access;
- Requirement not to unduly discriminate;
- Requirement to provide certain forms of network access on an EOI basis;
- Requirement to publish a Reference Offer;
- Requirement to notify changes to charges, terms and conditions;
- Requirement to notify technical information; and
- Specific network access and associated requirements.

8.2 In order to give regulatory effect to our decisions we have decided to set the SMP conditions set out in Volume 7.

### Section 47 tests

8.3 For each SMP condition set out in this statement, we consider that the conditions satisfy the tests set out in section 47 of the Act, namely that the obligation is:

- objectively justifiable in relation to the networks, services or facilities to which it relates;
- not such as to discriminate unduly against particular persons or against a particular description of persons;
- proportionate to what the condition or modification is intended to achieve; and
- transparent in relation to what it is intended to achieve.

### Objectively justified

8.4 We consider that each of the SMP conditions is objectively justifiable. The remedies are designed to address the competition concerns that we have identified in our market analysis (see Volume 2). As explained in Section 1, our market analysis has found that BT has the ability and incentive:

- to refuse to supply access and thus restrict competition in the provision of products and services in the relevant downstream markets;
- to favour its downstream retail businesses to the detriment of its competitors in the relevant retail markets, by both price and non-price discrimination;

- to set excessive wholesale charges or, in combination with downstream prices, engage in a price squeeze;
- not to invest in new networks or do so more slowly than would occur in a competitive market;
- to target price reductions or adopt other commercial terms that distort competition in the rollout of new networks; and
- to not maintain an adequate level of service quality in the provision and repair of wholesale services or to discriminate in the quality of provision.

8.5 Therefore, in the absence of a requirement to provide network access, supported by associated obligations, BT could refuse or impede access, or it could provide access on less favourable terms and conditions compared to those obtained by its own downstream businesses. We are therefore exercising our discretion in setting these obligations in favour of an approach that promotes competition and investment in gigabit-capable networks, by Openreach and other providers, in areas with the potential for material competition, while protecting consumers and existing models of downstream competition in the short term. In the remaining areas, we have chosen an approach that promotes competition and investment in gigabit-capable networks by Openreach, while seeking to protect consumers and existing models of competition based on access to Openreach's networks.<sup>604</sup>

8.6 We explain in Sections 2 to 7 for each obligation, why we consider that obligation is objectively justified in the context of the markets we have reviewed.

### **Not such as to discriminate unduly**

8.7 We consider that each of the conditions does not discriminate unduly against BT. We have decided that it is the only telecoms provider to hold SMP in the markets that we have identified (or can be treated as such under s.46(8A) of the Act regarding the inter-exchange connectivity BT+2 market) and the conditions seek to address that market position.

### **Proportionate**

8.8 We consider that each of the conditions is proportionate to what that condition is intended to achieve. In each case, we are imposing an obligation on BT that: is effective to achieve our aim; is no more onerous than is required to achieve that aim; and does not produce adverse effects which are disproportionate to our aim. We explain why we consider each imposed remedy is proportionate in the context of the markets we are reviewing in Sections 2 to 7.

### **Transparent**

8.9 We consider that each of the SMP conditions is transparent in relation to what is intended to be achieved. The text of the SMP conditions is published in Volume 7 and the operation

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<sup>604</sup> We explain in Volume 1 how this objective meets our legal duties.

of those SMP conditions is aided by our explanations in the statement. Our statement sets out our analysis of responses to the consultations and the basis for the final decision.

## Section 46

- 8.10 In Section 5 we are imposing SMP services conditions to apply to deregulated BT exchanges for a transitional period of 12 months. We consider this is consistent with section 46(8A) of the Act which provides that we can continue to treat a person (here BT) previously determined as having SMP in a given market, who we determine no longer has SMP in that market, as continuing to have SMP in that market for so long as we consider necessary to ensure a sustainable transition for those benefiting from the obligations imposed as a result of the previous SMP determination.
- 8.11 For the reasons set out in Section 5 we consider that the 12 month period is necessary for a sustainable transition for telecoms providers from Openreach's active leased lines to alternative services. We consider 12 months is no longer than necessary to achieve this aim.

## Section 49 tests

### Direction in relation to VULA contract lengths

- 8.12 In Section 5 we have decided to make a Direction in the wholesale local access market (Area 2 and Area 3) limiting the length of the minimum contract period following VULA migrations and connections to no longer than one month.
- 8.13 We consider that this Direction meets the tests set out in the Act. As set out in Section 5, we have included a power for Ofcom to direct the terms of access as part of the SMP condition requiring BT to provide network access on fair and reasonable terms, conditions and charges. We are making this Direction pursuant to that power.
- 8.14 We consider that the Direction meets the criteria set out in section 49(2) of the Act. In particular, it is:
- a) Objectively justifiable, in that it will promote competition by preventing BT from over recovering the cost of supplying VULA services. It is also likely to facilitate switching and promote retail competition for VULA services.
  - b) Not unduly discriminatory, in that the condition applies only to BT, which is the only operator to have SMP in the markets in which the Direction will apply (or can be treated as such under s.46(8A) of the Act regarding the inter-exchange connectivity BT+2 market).
  - c) Proportionate, in that, while it will promote competition, the overall impact on BT's incentives to invest, and more generally on take-up of fibre, is likely to be limited and the measure is, therefore, no more intrusive than necessary to achieve its intended goals.

- d) Transparent, in that it is clear in its requirements and intention, as explained in this document and the text of the Direction is set out at Volume 6.

## Section 87 factors

- 8.15 We are imposing SMP services conditions requiring BT to give such entitlements as respects the provision of network access to the relevant network, the use of the relevant network and the availability of the relevant facilities. As explained in Sections 2 to 6, in determining which conditions are authorised by section 87, we have taken into account in particular the factors set out in section 87(4) of the Act.

## Section 88 tests

- 8.16 We are imposing SMP conditions requiring BT to provide network access on reasonable request on fair and reasonable terms, conditions and charges where no charge control applies in each of the physical infrastructure, wholesale local access (WLA Area 2 and WLA Area 3), leased lines access (LL Area 2, LL Area 3 and the HNR Area) and inter-exchange connectivity markets (BT Only exchanges and BT+1 exchanges, and for a transitional period BT+2 exchanges). We set out how we consider the SMP conditions satisfy the tests set out in section 88 of the Act in Volume 4.

## Ofcom's duties

- 8.17 As set out in Volume 1, we consider the package of SMP conditions both individually and together meet our duties in sections 3 and 4 of the Act.