Summary of Openreach's current position on Ethernet Quality of Service

Business Connectivity Market Review 2019

NON-CONFIDENTIAL VERSION

July 2018

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1. Foreword

1. This is a pre-consultation submission, and summarises Openreach's current thinking on what the right regulatory remedies for Ethernet Quality of Service (QoS) should be in Ofcom's 2019 Business Connectivity Market Review (BCMR).

2. [✂]

3. This submission is not intended to be a complete or final exposition of Openeach's thinking or the evidence that we wish Ofcom to consider in relation to Ethernet QoS, and we will be following up with Ofcom with further submissions during the remainder of the consultation process. The considerations set out in this document are also subject to change in light of Ofcom's consultation proposals on market definition and Significant Market Power (SMP) assessment.

4. This submission is provided on behalf of Openreach, a functionally separate division of British Telecommunications Plc ("BT").

2. Summary

5. In the 2016 BCMR, Ofcom put in place a comprehensive and complex set of QoS remedies for Ethernet services, including various Minimum Service Levels (MSLs), Key Performance Indicators (KPIs), and Service Level Guarantees (SLGs).

6. Since 2016 Openreach's service performance has dramatically improved, and is now in many areas at world-class and stable levels. The regulatory remedies imposed in 2016 have played an important role in helping to deliver this successful transition.

7. Openreach considers that there are a number of factors that should be accounted for in the process for setting the right remedies this time round:

- **Ethernet service improvement.** In the 2016 BCMR Openreach's service was inadequate in a number of areas. This is no longer the case – Openreach is now delivering very good, and in some cases world class levels of service, and this is acknowledged by Communication Providers (CPs). Ofcom must take account of this radically different (and better) context in deciding on the right regulatory framework going forward, and should not seek as an automatic approach to simply "dial-up" MSL levels in cases where Openreach performance is already at very good and acceptable levels.

- **Better insight.** When the QoS remedies were put in place in 2016, the MSLs (which formed the centrepiece of those remedies) were being applied for the first time in Ethernet markets, and were set without a deep understanding (by Openreach, Ofcom or CPs) of whether they were the right MSLs, were set at the right levels, or at levels that were achievable. Since then, Openreach has gained significant new and additional operational insight into the achievability of the MSLs. It is important that this additional insight is taken account of by Ofcom in its review.

- **Complexity of delivery**. Openreach considers that the underlying complexity of circuit delivery, particularly for more complex Ethernet orders, has been increasing in recent years, and that this factor needs to be taken account of by Ofcom in specifying certain of the MSL levels, particularly for the Upper Percentile and Certainty MSLs, which we continue to believe are set beyond what is operationally achievable, and need to be changed.

- **Efficient levels of operation.** In most areas, Openreach is now moving (or has moved) to a steady-state, efficient level of operation. Delivering further incremental improvements in this context is increasingly difficult, and Openreach considers that the best way to unlock further incremental service benefits for end customers will be by making changes to the end to end delivery processes involving Openreach and CPs. [✂].

- **Pragmatism.** Openreach has considered whether a total re-write of the existing MSL remedies could deliver better outcomes. However, we have also noted the limited timescales available to stakeholders in setting the new regulation, and also that the next BCMR period may only last for two years (our proposals are based on this assumption). Given these factors, and noting also that stakeholders such as CPs are likely to want to maintain a degree of continuity in the near-term, Openreach is proposing a number or amendments to the existing remedies, but within the existing QoS framework that Ofcom set down in 2016.

- **Future changes to the market**. The market for Ethernet services is dynamic, unpredictable, and subject to change. [✂]. It is important that the regulatory framework set down by Ofcom is sufficiently flexible to deal with changing market conditions.

- **Interdependence of the remedies**. The various remedies (MSLs, KPIs, SLGs) are to a large degree interdependent. In setting the new remedies, it is important that Ofcom takes a step back and assesses the remedies holistically, to ensure that they are part of a unified and coherent whole that is both proportionate, and that puts the right incentives on Openreach.

- **Delivering continuity of excellent service is at the heart of Openreach's strategy.** Openreach is determined to continue delivering excellent service to its customers, for the good of the market.

Although our ambitions are not limited to, or defined by, exceeding the MSLs (along with meeting the other remedies), there are some areas where our performance is such that we are proposing a tightening of the MSL levels imposed in 2016.

8. Overall, Openreach is proposing a set of regulatory remedies that will create the right incentives for continuity of excellent service in future. Further comments on specific remedies are set out in the remainder of this document.

9. Table 2:1 and Table 2:2 below set out a summary of Openreach's current position on Quality of Service remedies, including specific information about individual MSLs and where we believe that Ofcom needs to make amendments in the next BCMR. The proposals set out below are intended as a whole (i.e. it would not be suitable to "cherry pick").

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Table 2:1 - Openreach view of Ethernet MSLs

MSL	Current MSL	Openreach view
a) **Mean Time to Provide (MTTP)**	40 working days or less	The level could be tightened to become "38 working days or less". Openreach believes that this is achievable over the period of the new control.
b) **Upper percentile TTP (UPL)**	No more than 3% ccts. delivered in greater than 118 working days [✂]	The percentage level of this MSL needs to change to reflect operational conditions and efficient level of operation, which Openreach considers is more than 3%. Our view is that the UPL should change to no more than 5% of circuits delivered in greater than 118 working days, or alternatively no more than 3% of circuits delivered in c. 159 working days.
c) **Lower percentile TTP**	At least 40% ccts. delivered in 29 working days or less	The level could be tightened to at least 55% of circuits delivered in 29 working days or less. Openreach believes that this is achievable over the period of the new control.
d) **Certainty (iCDD)**	88% delivered on or within iCDD [✂]	The percentage level of this MSL needs to change to reflect operational conditions and the efficient level of operation, which Openreach considers is less than 88%. Our position is that slightly higher performance can be delivered in Year 1 versus the performance delivered during the Temporary Conditions period. We will then deliver a slightly higher performance in Year 2 versus the performance delivered in year 1. [✂]
e) **Crosslink**	No greater than prevailing MTTP + 15 working days	Maintain MSL per existing specification.
f) **Repair**	94% of faults fixed within the agreed SLA	Maintain MSL, but include allowance for MBORC in the target (which remains at 94%).

g) Other MSL features	Compliance period (duration)	Maintain annual assessment.
	Geographic scope	Maintain UK-wide assessment (excluding de-regulated areas and Hull).
	Product & order type scope	Maintain existing scope[1].
	Treatment of delays	Maintain existing arrangement.
	Cost recovery	Appropriate linkage to charge control to allow full recovery of efficiently incurred costs.

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[1] Subject to Ofcom's conclusions on product market definitions

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Remedy	Openreach view
Minimum Service Levels	See comments in Table 2:1
Key Performance Indicators (KPIs)	The KPIs can be simplified to create a more meaningful and insightful set of metrics which Openreach considers will be more useful to Ofcom and customers. As part of this Openreach suggests creating new and more meaningful KPIs relating to 'planning' performance as this will be of interest to CPs. This could include, for example, introducing new KPIs looking at mean time to issue the CDD, and KPIs based on percentile time distribution etc. To note, we strongly recommend that Ofcom do not impose an MSL on planning as this could have significant adverse unintended consequences. This is explained later in this document.
Overarching QoS SMP obligation	Openreach's view is that the existing arrangement should be maintained. This will allow Ofcom to make modifications to the regime should it be necessary during the course of the regulated period.
Process for negotiating new / changes to existing SLAs/SLGs	Openreach's view is that the current arrangement should be maintained.
SLG Direction 2008 (provision)	The current SLG quantum was set 10 years ago and hasn't been changed since. We believe that the quantum of the provision SLG is excessive (particularly given that there are now many other regulatory remedies in place that also incentivise efficient performance), and needs to be reviewed so that it is based on CP costs incurred. [✂] [✂]
Contract / process changes	Openreach's view is that changes are required to the existing Ethernet contract and lead-to-cash process to drive a better distribution of responsibilities and incentives with CP customers, in order to benefit end-customers by providing a better end-to-end service.

	Openreach is working closely with the OTA2 on this process and is planning to bring a proposal to market later in the year. [✂].

Table 2:2- Openreach's current view on BCMR 2019 Quality of Service remedies

3. Ethernet service improvements

10. The MSLs were first set by Ofcom in the BCMR in 2016, following a period of analysis between 2014 and 2016. In comparison to the MSLs set by Ofcom on services in the Fixed Access markets, Ethernet products are relatively low in volume, subject to greater volatility in demand and have a much more variable range of lead times depending on the type and complexity of the order.

11. Importantly, when setting the MSLs on the copper-based fixed line services, the amount of available data and the understanding of suitable service metrics was much more substantial in terms of its maturity (copper line services had been in existence for much longer). This enabled a better understanding of what both acceptable and achievable levels of service looked like.

12. In 2016, these factors were much more difficult to determine for Ethernet services for two primary reasons: (1) issues surrounding the maturity and reliability of the available data, and (2) during the period of analysis Openreach's Ethernet performance was sub-optimal due to a build-up of "tail" orders – which made it more problematic to understand what a more efficient steady-state would look like.

13. Openreach accepts that service levels fell to unacceptable levels during 2014/2015 and has already provided significant detail to Ofcom about how it has transformed the performance levels by delivering large scale improvement programmes, as well as providing Ofcom with information regarding the further initiatives that are progressing now and in the future.

14. In particular, a key achievement is that the level of Ethernet provision performance that Openreach is now delivering has dramatically improved since 2016, and in many respects is at best-ever levels.
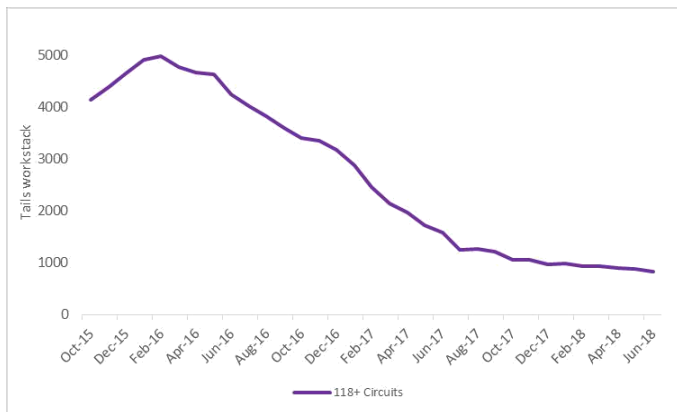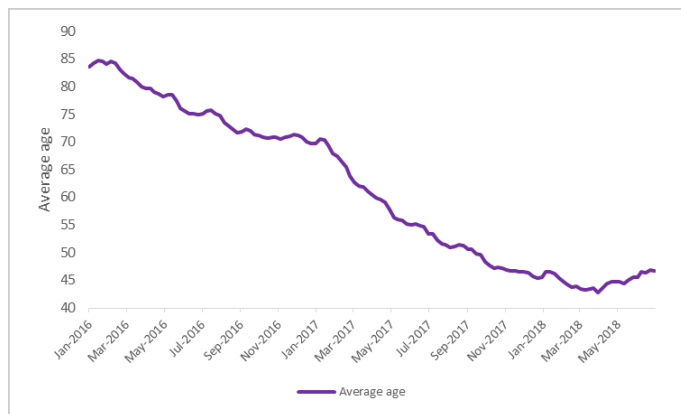
Figure 3:1 - Tail provision work stack age

Figure 3:2 - Average age of work stack

15. Figure 3:1 and Figure 3:2 illustrate the dramatic improvement to service in recent years. Figure 3:1 shows how Openreach has been reducing the volume of the aged "tail" of circuits in the workstack, while Figure 3:2 illustrates the reduction to the average age of the overall provision workstack. We believe that both of these measures are now at /near efficient levels.

16. Other improvements delivered by Openreach include:
- Delivering highest ever levels of circuit completions, with c.53k circuits delivered in the financial year 2017/18, with over 1,000 circuits consistently delivered on a weekly basis for several months;
- Increasing certainty performance to consistently above 80% from sub 50% in 2014;
- Reducing the size of the overall provision workstack to sub 14k (the lowest levels since 2013), and maintaining it between c14.0 - 14.5k circuits through 2018;
- Significantly reducing the elements of delay within Openreach's control for dependencies associated with causes of delay such as wayleaves / civils.

17. The overall transformation in service improvement is very significant in magnitude. This reflects both the scale of Openreach's ambition, and the level of improvements needed to meet those ambitions (which include, but are not limited to, exceeding the MSLs). This work has been led by a new senior management team within the Ethernet delivery organisation and has included:

- An increase in the amount of operational resources applied to Ethernet delivery – both direct labour and contractor resource in the desk and field, plus improvement to the tools used by the engineering teams to increase efficiency and productivity;
- Major organisational and cultural change, moving to a regional structure with enhanced emphasis on local and personal accountability;
- The progressive roll-out of the Equivalence Management Platform (EMP), the next generation ordering platform for Ethernet; and
- A detailed set of transformational improvement initiatives, covering a very broad range of areas including (but not limited to) increasing delivery date certainty, reducing the volume of tail circuits, improved customer communication, improved contractor management, and better understanding of (and reducing) principal causes of delay.

18. Openreach believes that the improvement programme it has been rolling out has been successful, and has focussed on the right things, at the right time. This has been recognised by our customers through comments received at the Ethernet Service Forums and individual Board to Board meetings. It has been also been reflected in our customer satisfaction survey scores, as discussed further below.

Customer satisfaction

19. Customer (CP) satisfaction is a useful indicator of how Openreach is doing on service, including whether we are moving in the right direction, and are focusing on the service-related issues that matter most.

20. We have been running customer satisfaction surveys specifically for Ethernet services in order to provide insight into how we are getting on, and to help take the temperature of ongoing performance.

21. As shown in Figure 3:3 below, we have been making very good progress with significant improvements to customer satisfaction delivered over the last year. Improvements include a 102.5 point increase in the "Net Promotor Score.[2]"

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[2] The Net Promoter Score is an index ranging from -100 to 100 that measures the willingness of customers to recommend a company's products or services to others. It is used as a proxy for gauging the customer's overall satisfaction with a company's product or service and the customer's loyalty to the brand.

[✂]

Figure 3.3 [✂]

22. The level of improvement to customer satisfaction is in large part due to the significant enhancements that have been made to the service experience being delivered for Ethernet.

23. Improvements to the service experience go beyond the speed and certainty of circuit delivery, and include factors such as:

- Improved communication and performance by contractors;
- Better quality checks;
- Product enhancements such as engineering single visit;
- Good levels of service and account team knowledge;
- Dealing better with problem areas such as repeat reports and repeated escalations;
- Better notes relating to key stages in circuit delivery; and
- Refreshing the online portal.

24. We remain focused on delivering further improvements to customer satisfaction going forward, with activities including using an ICS Business Benchmarking survey to measure our customer satisfaction levels against our competitors and rolling out further training to create a true service culture throughout the operational organisation (e.g. "Every Contact Counts" across the desk teams and "Your Visit Counts" training being trialled with the engineers in the South region.

25. In addition to the improvements evident from the customer satisfaction, there is also significant anecdotal evidence that many of our customers now consider that our service is at very good and acceptable levels. This has come from senior customer interactions, including those who have been our biggest critics in the past. This has allowed dialogue with customers to focus on other matters such as commercial plans, whereas when Ethernet service was below acceptable levels, this subject tended to dominate discussions. Some customers have also favourably compared our performance against that delivered by other telecommunications providers.

26. Openreach is not complacent about the improvements it has made to Ethernet service, and is determined to maintain those improvements going forward, and make further enhancements where possible and needed. Ongoing customer satisfaction (whose results we regularly share with our customers) provides a useful tool to ensure we remain in touch and responsive to this most important stakeholder group.

27. We do also consider that there is evidence to show that in many regards the service that is already being delivered is at acceptable levels, and it would not be right or proportionate for Ofcom to merely "dial up" the existing MSL measures, particularly in circumstances where this is not required by the market.

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28. Improved operational insight has told us that the length of time required to improve service meant that firstly the MSL targets fundamentally did not allow Openreach enough time to clear the tail, and (linked to this point) that the MSLs should be set on more up-to-date data, to determine what the right levels should be.

29. For some measures, for example certainty and UPL, it is difficult to be precise as to what the right MSL levels should be, and Ofcom should exercise caution when designing the remedies.

30. Openreach recognises that customer demands are continually increasing and is equipped to manage these increasing service expectations. The ambition set by Openreach is that we continue to improve service for our customers; but this should not necessarily equate to an increase in MSL thresholds. Customer requirements also come in the form of product development, flexible solutions and an overall smooth ordering experience, and setting the MSLs at the wrong level (either by not amending the levels to reflect more efficient levels, or ramping them up) could drive behaviours which do not necessarily align with customer requirements in 2018, for example, by incentivising Openreach to deliver orders too early.

31. We believe that this could have significant unintended consequences on customers, and wish to avoid such a scenario. We firmly believe that our service and transformation improvement plans that we have put in place will form the right basis to enable a steady, and stable, growth in service performance.

4. MSLs

32. In this section, Openreach sets out its position and request for each aspect of the MSLs and the supporting justification and evidence for this position. Our recommendation considers the MSL remedy as a package.

a) Mean Time to Provide (MTTP) MSL

Openreach position and recommendation

MSL	Current MSL	Openreach view
MTTP	40 working days or less	The level could be tightened to become "38 working days or less". Openreach believes that this is achievable over the period of the new control.

Table 4:1

33. Openreach generally supports Ofcom's desire to place an MSL on the average time for an order to be completed, i.e. MTTP. Whilst MTTP performance has significantly improved over the last few years, it is only

one metric used to assess performance. Having said this, MTTP is a recognised measure and we are supportive of it being a regulated metric. Further, in order to demonstrate our commitment to improving lead times even further for customers, Openreach is prepared to voluntarily offer to tighten the MSL to become "38 working days or less."

Considerations and supporting evidence

34. Openreach is already operating below the existing MTTP for 40 working days or less, as shown in Figure 4:1 below. Openreach recognises the importance of this MSL to stakeholders. Therefore, in looking at service remedies as a whole, we are prepared for this particular MSL to be tightened to 38 working days, and we believe that this can be sustained across the next BCMR period.

35. Whilst Figure 4:1 does show that performance is flattening out at around 35 working days, this is subject to variation so Openreach recommends that Ofcom do not change the MSL to this level. We are currently in the summer months of the compliance period so it would not be appropriate to conclude that 35 working days is the right MSL. We consider that 38 remains the most proportionate level for the MSL at this stage, noting that if Openreach is able to "beat" the MSL we would always attempt to do so, as evident from our performance since 2016.
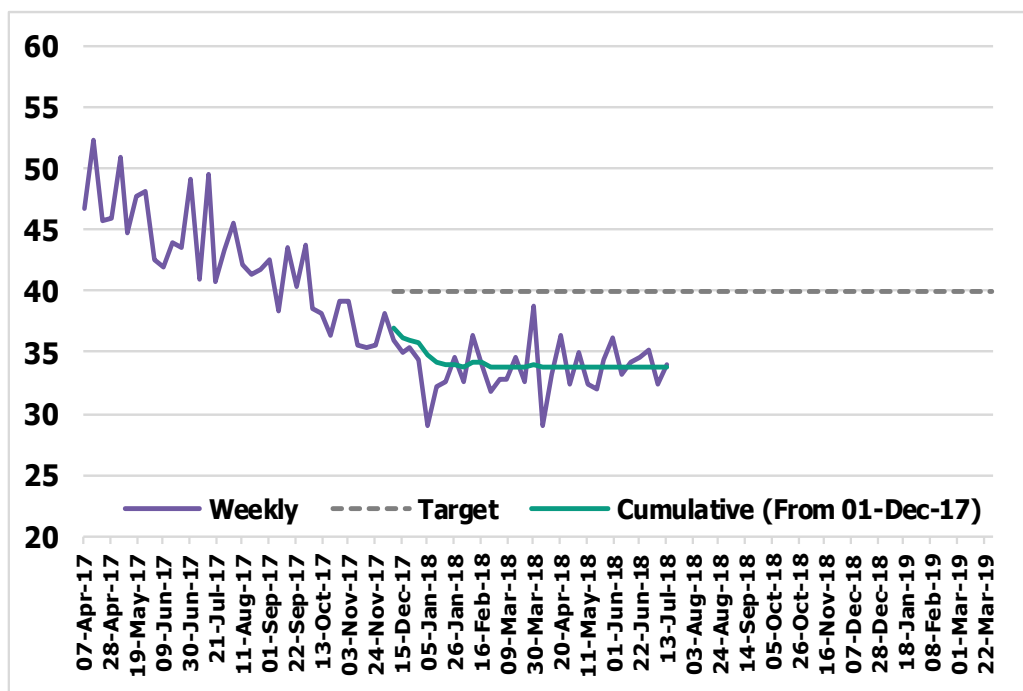

Figure 4:1 - Performance against the MTTP MSL

36. Openreach intends to provide further analysis around the achievability of the MTTP MSL in addition to potential impacts in later submissions.

b) Upper percentile MSL

Openreach position and recommendation

MSL	Current MSL	Openreach view
Upper percentile TTP (UPL)	No more than 3% ccts. delivered in greater than 118 working days [✕]	The percentage level of this MSL needs to change to reflect operational conditions and efficient level of operation, which Openreach considers is more than 3%. Our view is that the UPL should change to no more than 5% of circuits delivered in greater than 118 working days, or alternatively no more than 3% of circuits delivered in c. 159 working days. Openreach's view is that this suggestion reflects the present-day efficient market conditions.

Table 4:2

37. Openreach is seeking a change to the Upper Percentile MSL. We believe that if it continues to be appropriate to set an Upper MSL at this point in the tail, then the level should be set at around 5%. Alternatively, if Ofcom are keen to keep the volume of tails at no more than 3%, i.e. to restrict the proportion of orders that become tails, Openreach consider that changing the definition of a "tail" to those orders that take more than c. 159 working days would also meet this objective, as we can see from the data that the tail is not efficient at anything less than this. Ultimately, 3% at 118 working days is not, in our view, going to be achievable and Openreach cannot accept this as a proposed MSL.

Considerations and supporting evidence

38. Figure 4:2 sets out Openreach's recent performance against the Upper Percentile MSL. As shown, Openreach has improved performance considerably in this area, and this is testament to the operational focus that has been applied to tails, as part of the overall improvement programme.
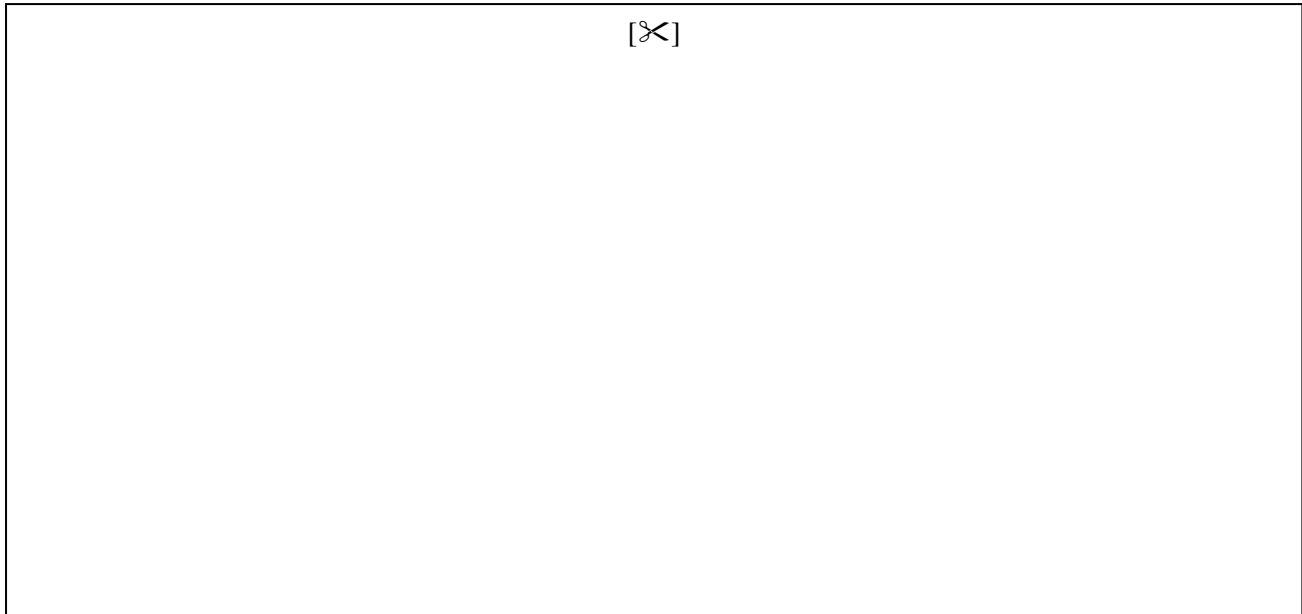
[✂]

Figure 4:2 [✂]

39. As Figure 4:2 demonstrates by the cumulative data points in green (showing the overall cumulative average since the compliance period began on 1 December 2017), the percentage of overall circuits taking 118 working days or more to complete is starting to flatten out at a rate of between 4-5%. It also demonstrates that there is significant weekly volatility in the Upper Percentile measure, but that for the majority of weeks, performance sits between the range of 3% and 5%. With all of the improvements delivered to date (plus ongoing improvement initiatives) we expect the percentage rate to remain around this level. Openreach considers that in the wider context of service improvements, alongside innovation and investment plans, this level is a much more efficient and realistic level compared to the current threshold. We also consider that an UPL of 5% is likely to be acceptable to our customers.

40. As Openreach has previously set out to Ofcom, there are a number of reasons why the current percentage level of 3% will not be met, and should be changed in the next regulatory review. Below we set out a summary of the issues faced.

A. **Increases to operational and delivery complexity:** On a general level, order complexity has increased since 2011. This means that more civils work (i.e. digging up roads and building new infrastructure) is required, in a wider range of geographies. There is a level of commonality between these types of orders with the need for third party involvement to obtain wayleaves, which can contribute to lengthy delays. As set out in Annex 1, Ofcom should not base their assessment of whether complexity is increasing on the categorisation of Ethernet orders. Instead, there are a wide range of factors that contribute to an order becoming more "complex," such as geo-type, propensity

for civils, dig length, permissions required etc. Openreach is currently progressing its own analysis on this area and will update Ofcom on the conclusions in due course.

B. Inclusion of third party delays into Openreach's MSL targets: Openreach has consistently argued that there are elements of the wayleaves and traffic management application process that are not directly within Openreach's control. Openreach agrees that there are *some* cases where Openreach remains the best party to lead negotiations with wayleave grantors, however there are still elements that remain outside of our control in these scenarios. There are also cases where Openreach has no involvement at all with the wayleave grantor. Openreach has made the case previously that wayleaves have become commercialised by landlords and this is evident from the number of wayleaves required and duration of time to secure due to the protracted legal process now encountered. This means that one of the reasons that a 3% maximum on orders taking longer than 118 working days to deliver cannot be achieved is that these delays count towards the overall total (which are either not directly in or outside of Openreach's control).

Changing the definition of a tail

41. Openreach has significantly improved performance in relation to this measure (as demonstrated in Figure 4:2. We do not consider that our proposal is a dilution of the existing MSL, but rather resets the MSL to a sensible level (consistent with what an efficient operator would deliver), based on operational insight.

42. We recognise the desire to keep the volume of orders impacted by tail circumstances to a minimum, wherever possible – recognising the fact that there will always be orders that take longer to deliver.

43. However, it is important that Ofcom take account of what is achievable in setting the MSLs for the next regulatory period. As noted earlier in this submission, an MSL of 3% linked to a tail of 118 working days is not going to be a condition that Openreach would be able to accept, knowing it could not be achievable.

44. Maintaining the acceptable proportion of orders that can become tails at 3% would lead to a change in the definition of a tail to c. 159 working days. This is still a challenging metric, but can be maintained as per Figure 4:3 below.
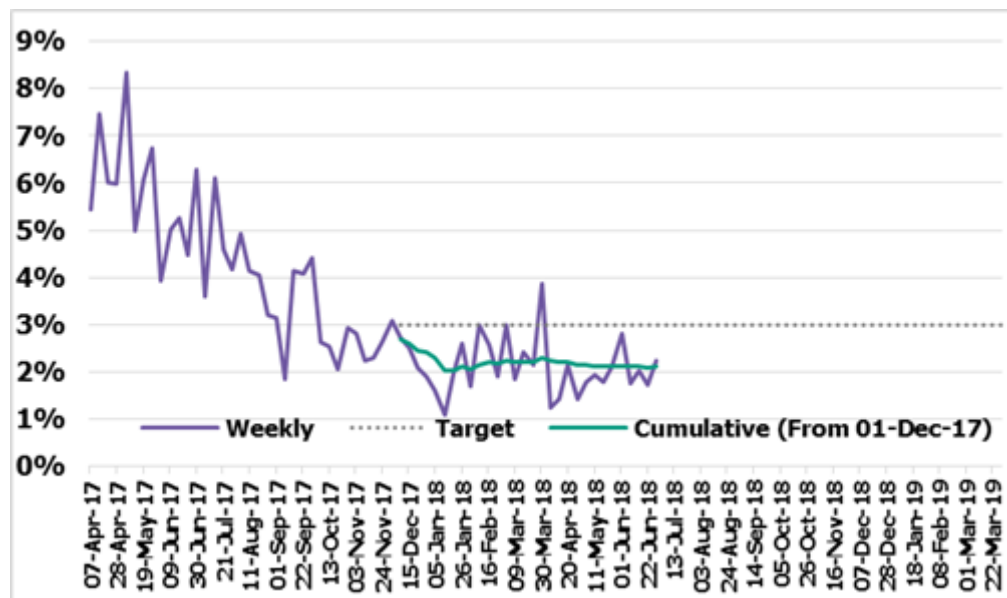
Figure 4:3 - Percentage of orders completed over 159 working days

Further analysis

45. Openreach has been conducting analysis around the achievability of the MSLs. The analysis is not complete so has not been included as part of this submission but will be provided to Ofcom in due course. The analysis focusses on several key areas, including:

(1) **Analysis of historic trends in order complexity**: early conclusions indicate that complexity factors such as wayleaves and civils did increase over the period between 2011-2016 and were not impacted by the backlog. This was in part due to the rurality of the order mix. Our analysis is indicating that complexity is continuing to increase, and in areas where it has not increased or has declined it has been due to process improvements.

(2) **Analysis of historic trends in order growth/decline:** this is an important consideration that Ofcom has never factored into their assessment of MSL achievability. The MSLs were originally set based on a period where there was faster than average growth in demand. However, as growth has slowed it impacts the achievability of some of the MSLs, particularly the UPL, where there are fewer orders in the workstack which impacts the ability to maintain a lower delivery time. This means that there will be proportionally more tail orders if the whole workstack is lower.

(3) **Scenario modelling using Monte Carlo simulation of underlying trend factors to demonstrate possible future outcomes:** our preliminary analysis shows how the volatility of complexity and order type is important in considering achievable outcomes. There are additional links to certainty performance which are being developed, as longer orders (and those that become

tails) are far more likely to fail their initial CDDs because of the difficulty in forecasting delivery timescales. [✂].

46. As indicated, these are initial conclusions and we will update Ofcom with the analysis accordingly.

[✂]

47. During 2017/18 discussions with Ofcom were held regarding the request for Ofcom to make amendments to the Upper Percentile and Certainty MSLs which were reimposed in the Temporary Conditions statement. [✂].

48. [✂].

49. [✂].

   i.   *[✂]*

50. [✂].

[✂].

[✂].

51. To understand and demonstrate the impact of the underlying trend in the intake level and complexity of circuits abstracted from any backlog effects, we are undertaking further analysis (as noted above). This has involved:

- [✂].
- [✂].
- [✂].

52. The rationale of this work is based on the premise that the outcome of the MSL targets under their current structure is broadly determined by the following three factors:

- The level of complexity in the order intake in the period before and during the regulated period.
- The rate of growth in the order intake in the period before and during the regulated period as this changes the relative proportions of new and old orders completed within the regulated period, as noted above.
- The underlying efficiency and level of performance of Openreach.

53. As indicated, this analysis is being developed and we should be in a position to share with Ofcom during the BCMR Remedies consultation period. [✂].

ii.   *[✂]*

54. [✂].

55. [✂]. Ethernet orders are bespoke and can involve complex civil engineering projects and each order is unique. [✂].

iii.   *[✂]*

[✂]

56. [✂].

Concluding comments

57. We consider that there is good evidence to suggest that we are now operating at an efficient level of performance for this metric based on market conditions and a 5% (or 3% at 159 working days) minimum standard would be a proportionate remedy.

c) Lower Percentile MSL

Openreach position and recommendation

MSL	Current MSL	Openreach view
Lower percentile TTP	At least 40% ccts. delivered in 29 working days or less	The level could be tightened to at least 55% of circuits delivered in 29 working days or less. Openreach believes that this is achievable over the period of the new control.

Table 4:3

58. Openreach generally agrees with the objective of maintaining the proportion of orders that are delivered with shorter lead times, and that any improvements implemented to tackle more complex orders should not impact those orders that should be relatively simpler to deliver.

59. As indicated to Ofcom previously (via the Ethernet categorisation process document which we have re-provided in Annex 1) the categorisation of Ethernet orders is just one way of assessing complexity and should not be used alone in determining trends or making assessments of how "difficult" or "easy" orders are to deliver. The lower percentile measure, therefore, is not just a metric which assesses the performance of Category 1 orders.

60. In order to demonstrate Openreach's commitment to delivering an increasing proportion of orders in a faster time, Openreach is prepared for Ofcom to tighten the regulatory MSL so that the target would be to deliver at least 55% of circuits within 29 working days or less (increased from 40%). Although Figure 4:4 below shows that performance has been well above the target, and has stabilised somewhat around 60-65% of orders taking 29 working days or less, this is subject to variation. Should Ofcom wish to tighten the MSL, we recommend that 55% is the right level, noting is that Openreach will consistently aim to beat this level of performance.

61. To note, Openreach would continue to perform strongly against this measure regardless of whether it was an MSL or not, and would be required to perform well in this area in any event in order to meet our MTTP MSL.

Considerations and supporting evidence

62. Openreach is currently operating at a level that is exceeding the MSL target, at c. 64% of orders being delivered within 29 days or less (see Figure 4:4 below).
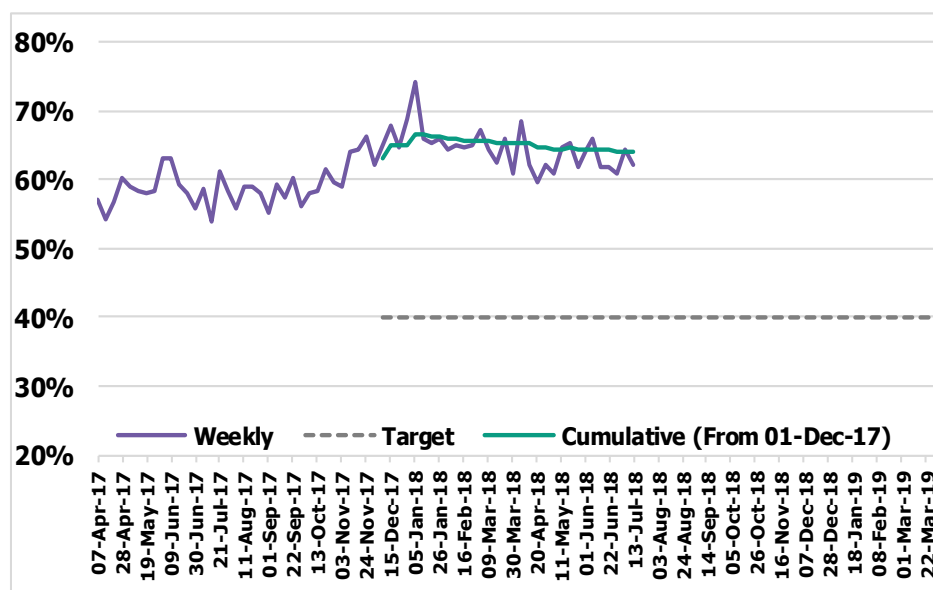
Figure 4:4 - Performance against the Lower Percentile MSL

63. The improvements to this measure are as a result of process improvements, including investment in pre-built network and generally improving MTTP. It is not necessarily as a result of an increasing proportion of Category 1 order types, as indicated in Figure 4:5 which has also been provided in Annex 1. Noting the period in 2016 where Openreach changed its categorisation system, this chart shows that the proportion of order types has not significantly changed over time, in terms of absolute volumes.

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[✂]

Figure 4:5 [✂]

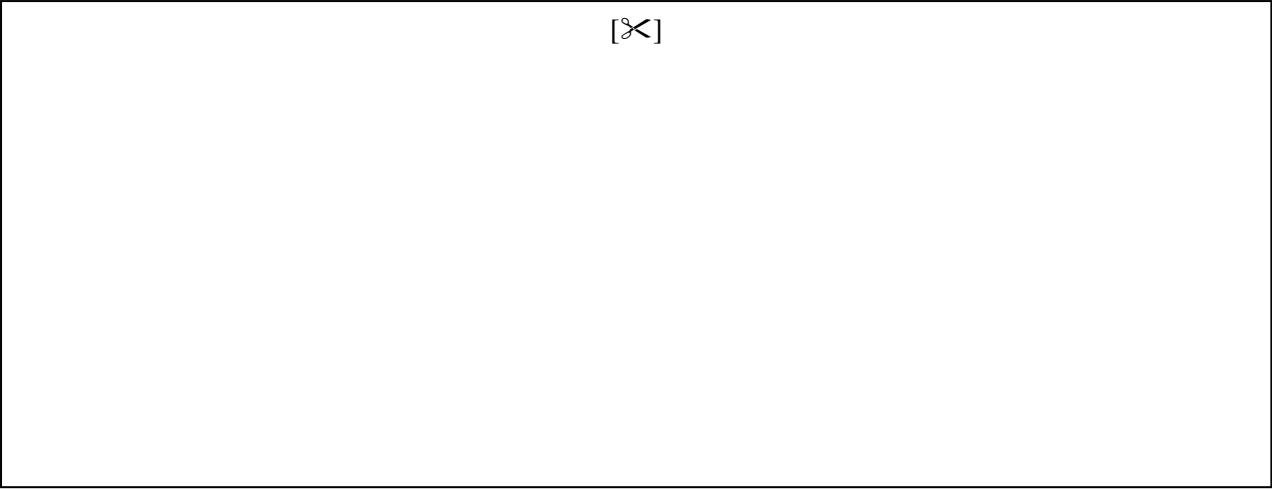64. Please see Annex 1 for more information about the categorisation of Ethernet orders, and how the categorisation of an order does not determine how complex it is to deliver.

d) Delivery date certainty MSL

Openreach position and recommendation

MSL	Current MSL	Openreach view
Certainty (iCDD)	88% delivered on or within iCDD [✂]	The percentage level of this MSL needs to change to reflect operational conditions and the efficient level of operation, which Openreach considers is less than 88%. Our position is that slightly higher performance can be delivered in Year 1 versus the performance delivered during the Temporary Conditions period. We will then deliver a slightly higher performance in Year 2 versus the performance delivered in year 1. [✂]

Table 4:4

65. Openreach's view is that performance 88% against the iCDD measure is not going to be achievable. There are too many external factors that influence our ability to meet the date that is predicted and we are currently bound by certain commercial limitations. Our position is that we would be able to deliver incremental increases to certainty from the performance level achieved in the Temporary Conditions period (1 December 2017 - 31 March 2019) in the first year of the new regulatory period (i.e. 2019/20), and then a further incremental benefit on top of that in the second year (i.e. 2020/21). To the extent that there is a third year of the regulatory regime, we will need to conduct further analysis.

Considerations and supporting evidence

66. Figure 4:6 sets out Openreach's recent performance against the certainty MSL (performance against the initial contractual date provided). As the chart indicates, certainty performance has improved significantly over the period but the rate of improvement has slowed down and is signalling that levels could be flattening out.

[✂]
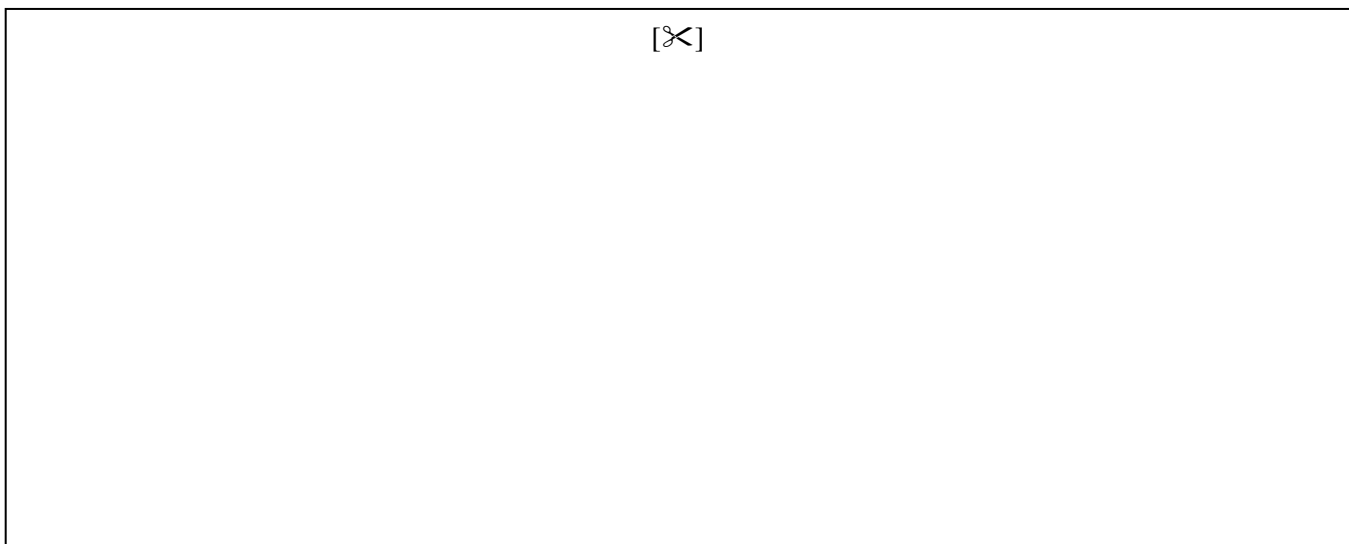
Figure 4:6 [✂]

67. As indicated previously to Ofcom, Openreach remains concerned that the certainty MSL is currently set at a level which will be unachievable to hit. The certainty MSL is a complex measure as it is ultimately based on a prediction of delivery timescales. The longer and more complex the circuit is to deliver the harder it becomes to accurately forecast the exact duration of the individual activities required to complete the order.

68. Openreach's view is that there are strong grounds for Ofcom to amend the percentage level of the certainty MSL to reflect changes in operational conditions and the efficient level of operation we are starting to see. There are a range of issues that should be considered regarding the certainty MSL threshold in the next BCMR:

A. **Increasing complexity:** As indicated above, the most complex orders are the most difficult to forecast as the longer the duration of the order the more likely it is that the initial date will not be met. Openreach forecasts that this will continue to be an issue throughout the next regulatory compliance period. Market changes such as 5G roll out and [✂] could have a further impact on complexity and the mix of circuits ordered but this is difficult to determine due to the inherent uncertainty of such technological changes and timescales.

B. **Wayleaves:** Similar to the points raised above in relation to how wayleaves can impact speed MSLs, the fact that all wayleaves delay time remains on Openreach's clock is a considerable factor in an 88% certainty MSL not being achievable. Wherever possible, Openreach will secure the wayleave prior to setting of the iCDD because it is too risky to set the iCDD without this having been agreed. There can be a number of reasons that a wayleave could take longer than expected to agree, particularly because of the increasing number of third parties involved. This will of course impact planning timescales as well as overall lead times. However, wayleaves become particularly problematic for certainty performance when the requirement for a wayleave is identified later in the order journey (where it was not possible to determine prior to setting of the iCDD). This will almost definitely lead to the iCDD failing. Openreach considers that it has already made significant improvements in this area to date to address parts of the delay that are in its control and do as much of the identification as possible prior to setting the iCDD, but as we start to see an increasing requirement for wayleaves this will continue to have an impact on certainty (and speed) of MSL performance.

C. **Traffic Management:** Traffic management has an impact on certainty primarily where blockages in the network are not identified until later in the provisioning process and once after the iCDD has been set. This could mean that traffic management is required to allow access to dig up the relevant parts of the road, if applicable. This may require applications to be made to the local authority for the relevant permissions. There can be significant variation between different local authorities in terms of process and timescales, and Openreach will not always have direct control over this. As this time is on Openreach's MSL clock it could ultimately lead to a certainty failure.

D. **Improvement initiatives:** There are a number of ongoing improvement initiatives that aim to improve our certainty performance (a number of which were detailed in previous s135 responses) however there will be a lag between implementation and an improvement in MSL performance due to the measure being assessed on orders closed within a particular period. More importantly, the incremental effect of any performance improvement initiative will likely reduce as efficient levels continue to be achieved, and due to the factors explained above. Openreach will continue to seek ways of increasing the level of certainty but it is important to understand the difficulty in predicting

the impact of future performance improvement activities on the accuracy of the iCDD and Ofcom should not factor future improvements into its assessment of what the certainty MSL should be.

E. **Determining what the right level of certainty should be:** As indicated above, Openreach intends to continue to find ways to improve levels of certainty against the iCDD provided, but it is difficult to determine how much certainty will increase as a result of these initiatives, and therefore what the forecast levels of future certainty performance will be. The approach used by Ofcom to set the certainty MSL levels in 2016 was something of a "guess" with the 80% being based on an aspiration for the Differentiated Order Journey (DOJ) trial, and 90% selected as it appeared to be at an attractively high level. This time round, Ofcom should take a more robust approach in specifying what the right MSL level should be, and this should include greater consideration of the actual levels of performance delivered by Openreach. As shown in Figure 4:6, there are signs that the certainty performance now flattening out, and while Openreach considers that it can make year on year improvements to current performance in the Temporary Condition Period, these are likely to be relatively small. [✂].

F. **Contractual considerations:** Ofcom has previously queried with Openreach whether setting longer lead times (i.e. increasing the performance against the cross-link measure) would lead to higher levels of certainty. Theoretically this might be the case, as longer iCDDs could increase the chances of them being met. [✂].
Further comments on this subject are provided later in this document.

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[5]Category 2.1 orders have a 57 working day lead time for legacy orders where the CP has not opted out of the contractual clause

[✄]

69. [✄].

i.   *[✄].*

70. The iCDD MTTP ("crosslink") MSL was set by Ofcom amid concerns that Openreach would try and "game" the certainty MSL by setting overly conservative iCDD dates in order to have a better chance of meeting that date. Openreach argued in the BCMR 2016 that this would not happen for operational and commercial reasons[7]. This has proven not to be the case, as the actual mean iCDD has been not been close to the maximum limit.

71. [✄].

ii.   *[✄].*

72. [✄].

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[6] [✄]
[7] BCMR 2016 Final Statement, 28 April 2016, paragraph 13.425

iii.   *[✂].*

73. [✂].

iv.   *[✂].*

74. [✂]

e) MTTP iCDD MSL ("cross-link")

Openreach position and recommendation

MSL	Current MSL	Openreach view
Crosslink	No greater than prevailing MTTP + 15 working days	Maintain MSL per existing specification

Table 4:5

75. Openreach's view is that the "cross-link" MSL (i.e. the average lead time of the iCDD) should be retained as per the existing specification.

76. [✂]: Openreach had argued in the BCMR May 2015 consultation that there was no commercial or operational incentive to set overly conservative initial CDDs[8] because of the operational complexities it created, but also there are specific contractual limitations in place which prevent Openreach from readily adding in unnecessary buffer time into the dates it provides to customers.

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[8] BCMR 2016 Final Statement, 28 April 2016, paragraph 13.425

77. This is demonstrated in Figure 4:7– Openreach's performance against the cross-link MSL over the last 18 months.
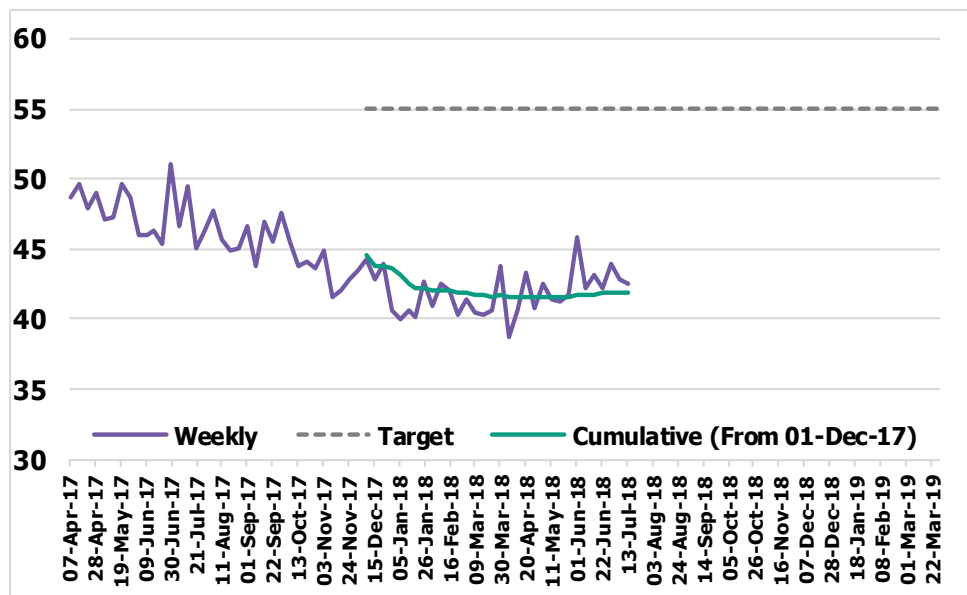

Figure 4:7 - Performance against the "crosslink" MSL (iCDD MTTP)

Considerations and supporting evidence

78. It is important to note that whilst the crosslink measure performance has been consistently around 42 working days, it would not be proportionate to rebase the MSL around this level.

79. Given that Openreach are seeking fundamental changes to the Ethernet contract and provisioning process, we now consider that keeping the cross-link measure as a targeted MSL could be helpful in signalling to industry that the changes that will be made will not mean that Openreach will be over-inflating its lead times unnecessarily, and that the MSL will prevent this.

80. As detailed later in this section, the contract changes seek to improve the efficiency of the end-to-end provisioning process, increase the quality of the communication with CPs and introduce better functionality within the process to be more flexible, which in turn should lead to better service outcomes for end-customers and CPs. We recognise that there currently exists flexibility within the existing MSL that could be utilised and it is our intention for this to be realised via the contract changes proposed. Therefore, we are keen to ensure that the cross-link measure is retained as-is, and not made more challenging, to ensure that flexibility can be used to provide increasing levels of certainty to industry.

81. [✂].

[✂].

f) Repair MSL

Openreach position and recommendation

MSL	Current MSL	Openreach view
Repair	94% of faults fixed within the agreed SLA (currently 5 hours)	Openreach's view is that this MSL should be retained, but needs to include an allowance for MBORC in the target (which should remain at 94%)

Table 4:6

82. The current repair MSL is for at least 94% of faults to be fixed within the Service Level Agreement (SLA).[9] Fault repairs that are subject to MBORC ("Matters Beyond our Reasonable Control" – also known as force majeure) events are contained within the MSL, and there is no allowance in the construction of the MSL target for MBORC.

83. Openreach considers that going forward, the MSL should remain at 94%, but this should include a fixed allowance of 2.5% to cater for MBORC events.

84. This would better align Ofcom's approach with that first taken in the Fixed Access Market Review (FAMR) of 2014, and since re-confirmed in the review of the Wholesale Local Access (WLA) markets in 2018, where Ofcom has, amongst other things, provided a fixed allowance for "local" MBORC events within the MSL targets for both provision and repair.

Considerations and supporting evidence

85. Within any given year MBORC type events, the causes of which are outside of Openreach's direct control, can occur and may cause Openreach to miss its repair SLA. The causes of these events can include extreme weather, but more commonly for Ethernet, criminal or negligent damage to the Openreach network caused by third parties.

86. When MBORC events occur, given the tight timescales of the repair SLA for Ethernet (5 hours), it is

probable that the SLA (and so MSL) will be failed for the circuits that are covered by the MBORC event.[10]

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[9] The Ethernet repair SLA is for faults to be fixed within 5 hours of the fault being received, subject to certain "stop the clock" provisions, 24 hours per day, 365 days per year.
[10] [✂].

87. Given the relatively low volumes of Ethernet repairs, when MBORC events occur, they can have a large impact on short-term performance against the MSL. This is shown in Figure 4:8 below, where for example, significant downturns in performance in August 2017, January 2018 and April 2018 were associated with MBORC events that occurred in Belfast, Cricklewood / Bradwell Abbey and Hounslow / Basingstoke respectively[11].
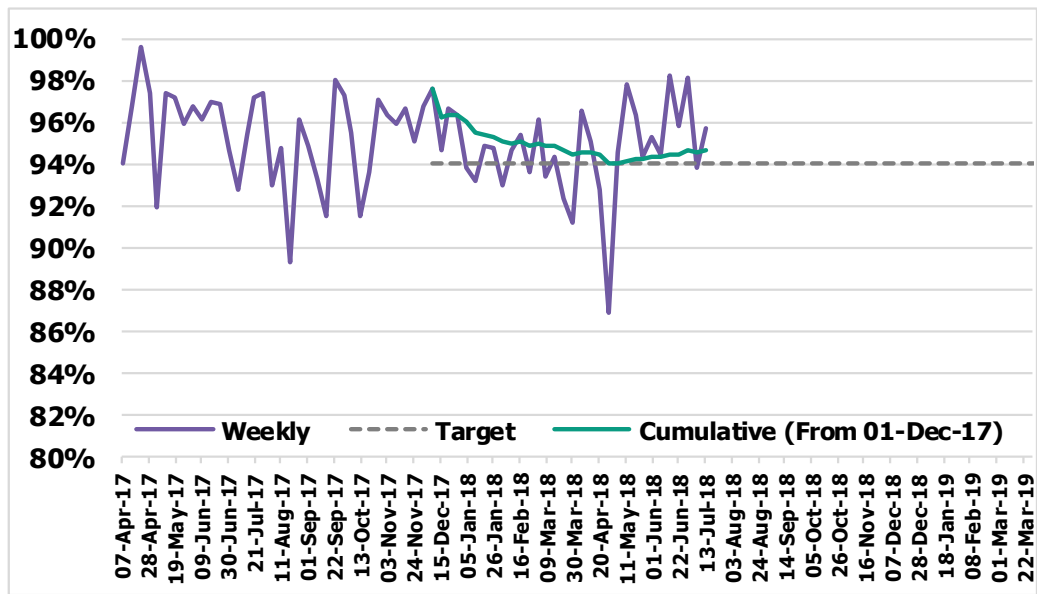

Figure 4:8 - Performance against the repair MSL

88. Table 4:7 below shows between April 2017 and May 2018 inclusive the proportion of overall faults that failed their SLA (and so the MSL) that were also subject to an MBORC declaration. [✂].[12]

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[11][✂].

[12]See 2016 BCMR Statement, paragraph 13.310.

[✂]

Table 4:7 [✂]

89. Openreach considers that it is reasonable that all faults, including those that are subject to MBORC declarations, are contained within the MSL. However, we also consider that in taking this approach, Ofcom should also provide a reasonable allowance within the construct of the MSL, for failures that are caused by MBORC events.

90. In the 2018 WLA statement covering the Quality of Service (QoS) remedies[13], Ofcom re-imposed MBORC arrangements for the MSLs in largely the same form as those previously imposed in the 2014 Fixed Access Market Review (FAMR).[14]

91. In the WLA, Ofcom concluded that it was appropriate for it to set both a fixed MBORC allowance for "local" MBORC events (which are analogous to the root causes of Ethernet MBORC events), plus an additional allowance for "High level" MBORCs typically associated with extreme weather events. Ofcom found that by setting a fixed MBORC allowance at a reasonable level Openreach's incentives to game the regime by over-declaring MBORCs would effectively be removed, whilst this approach also provided transparency regarding the level and rationale for the allowance.

92. In its WLA analysis, Ofcom had found that in the period 2014/15 to 2016/17 the percentage of faults that missed their SLA which were impacted by MBORC was between [✂]. Ofcom finally concluded that it should include in its remedies a fixed 3% MBORC allowance for the repair MSL, noting that this would provide an incentive for BT (Openreach) to reduce the impact of MBORC overall, as in any given compliance year it would be held accountable for all failures, including those that were also subject to MBORC declarations.

93. Openreach considers that many of the factors Ofcom took account of in the 2018 WLA regarding how to treat MBORC in the MSLs also exist for Ethernet. In particular, Ethernet is subject to local MBORC events whose causes are outside of Openreach's control, and whose impacts can impede its ability to meet the MSL targets imposed. For the reasons articulated by Ofcom itself, we consider that imposing a fixed allowance for MBORC at

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[13] See 2018 Statement on Quality of Service Remedies, paragraphs 5.53 to 5.80.
[14] See 2014 FAMR Statement, paragraphs 11.205 to 11.251.

the right level will help to remove incentives for Openreach to game the use of MBORC, whilst maintaining an incentive to minimise the impacts of MBORC events when they do occur.

94. Openreach also notes that if Ofcom or other stakeholders are concerned as to Openreach's "good practice" in relation to MBORC declarations, there are various monitoring remedies that could readily be put in place, while Openreach would in any event have good reasons not to depart from good practice in this regard as doing so could lead to a breach of contractual and / or regulatory obligations.

95. Finally, Openreach notes that in general terms stakeholders have remained satisfied with the level of performance Openreach delivers for Ethernet repair. Indeed, when Ofcom imposed a repair MSL in the 2016 BCMR it did so because it wanted Openreach to continue providing high levels of acceptable performance (at the time Openreach was fixing faults on average in c.94% of cases), and was concerned that if it didn't impose a repair MSL, resources used to effect repairs could be redirected to do provision work, leading to a deterioration in repair performance. In this context, Openreach questions why Ofcom set the MSL at the same level as the acceptable level of performance, when in practice Openreach is incentivised by the MSL to deliver performance at higher levels than the minimum standard imposed. Notwithstanding this point, Openreach considers that 94% would be a reasonable MSL, provided that Ofcom makes reasonable adjustments for MBORC.

96. In summary, Openreach considers that the repair MSL should remain at 94%, that the MSL should cover all faults, and that a fixed allowance for MBORC of 2.5% should be included in the composition of the MSL. We consider that this would be consistent with Ofcom's approach to this subject in the recent WLA, and would not diminish incentives on Openreach to continue delivering good levels of repair performance.

97. We are conscious that in the 2016 BCMR discussions with Ofcom on repair performance were minimal because focus was understandably on provision performance, which is where the issues were. We consider that it may be useful to discuss repair (including current processes) in more detail with Ofcom as part of their review.

98. [✂].

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g) MSL features and structure

Openreach position and recommendation

Compliance period (duration)	Maintain annual assessment.
Geographic scope	Maintain UK-wide assessment (excluding de-regulated areas).
Product & order type scope	Maintain existing scope[15].
Treatment of delays	Maintain existing arrangement.
Cost recovery	Appropriate linkage to charge control to allow full recovery of efficiently incurred costs.

Table 4:8

Considerations and supporting evidence

99. Openreach is keen to ensure that the MSLs are measured in a consistent way so that trends can be comparable over time. To this end, Openreach considers that the following features of the MSL regime should be retained:

Compliance period (duration)

100. Assessment against MSL performance should continue as an annual measurement. This is a well understood and accepted duration that is consistent with other MSL measurements and allows us to plan our business. Any measurement less than annual would be inappropriate due to the fluctuations in order volume, and potential disruptions caused by seasonal effects.

Geographic scope

101. Assessment against MSL performance should continue to be measured on a national basis, after excluding those geographic areas which are de-regulated due to no SMP findings. Given the relatively low order volumes

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[15]Subject to Ofcom's conclusions on product market definitions.

of Ethernet orders (e.g. in comparison to WLA markets), imposing MSLs on a sub-national basis could lead to statistically insignificant sample sizes. We have regional KPI reporting obligations to give Ofcom oversight of variations in performance against different regions in any event.

Product & order type

102. For consistency, the product types included should remain the same (EAD, EBD and Cablelink), insofar as this is applicable based on Ofcom's market definition and SMP assessment findings, as well as the order types (provide and regrades). The MSLs were baselined using these parameters so it is appropriate for them to be maintained over the next MSL review period.

Treatment of delays

103. Openreach makes the following points about treatment of different delays within the MSLs:

Customer caused delays

"Delays attributed by Openreach to its customers (or further downstream)[16]"

104. CP or end-customer caused delays should continue to be removed from all measures. Customer-caused delay is currently identified using a set of deemed consent codes, where Openreach is able to able to extend the contractual date of the order using a contractual mechanism if a particular delay takes place. Use of these codes is subject to scrutiny by CPs. [✂].

Non-customer

"Delays attributed by Openreach to either itself or third parties. Third party delays may include, for example, land owners and/or authorities where Openreach may be delayed during the delivery process whilst seeking permission to build on private property or carrying out street works".

105. Non-customer delay, as defined by Ofcom, includes any delay that is not caused directly by the customer. This could therefore include all the typical delays that could occur throughout the delivery of an order. Figure 4:9 and Figure 4:10 below set out the different stages of the order and the non-customer delays that can typically occur throughout. It is important to note that the term "delay," as well as its measurement, is used both to measure the necessary and calculated lead time of an order, in addition to when the order encounters an unforeseen issue which makes it fall off the "happy path." Ofcom do not distinguish between these two definitions in their assessment of the MSLs.

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[16]As described by Ofcom in the 2016 BCMR Final Statement, paragraph 13.218
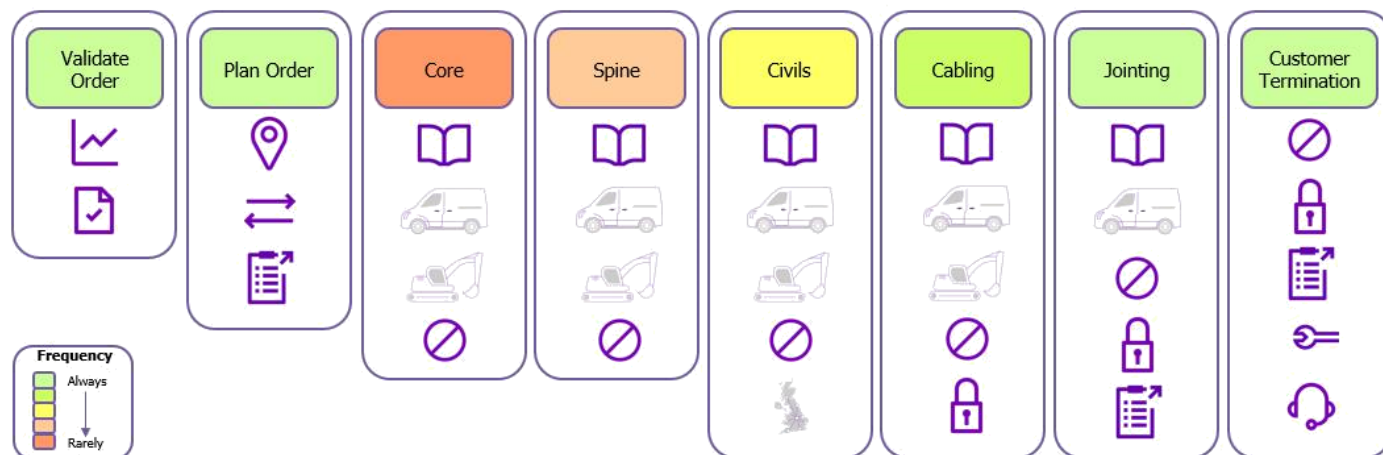
Figure 4:9 - Common "non-customer" delays in the Ethernet L2C process

[✂]
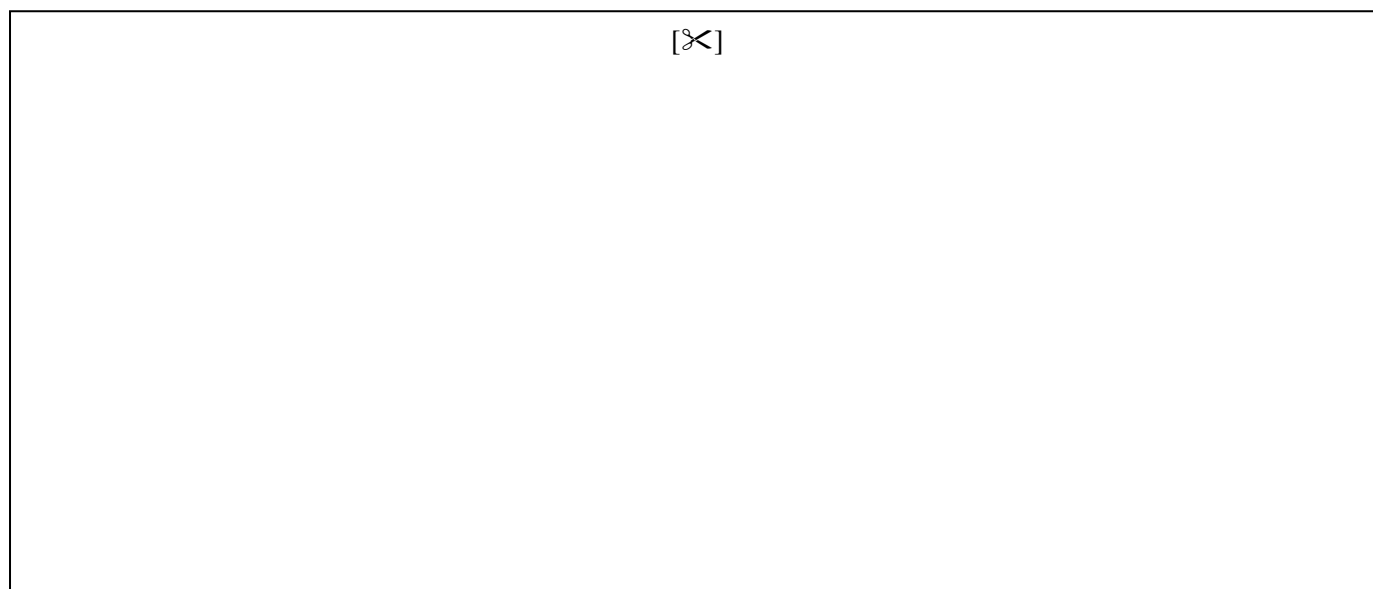
Figure 4:10 [✂]

106. Figure 4:9 and Figure 4:10[17] illustrate that multiple *types* of non-customer "delay" can occur at multiple stages of the Ethernet delivery process. All of this delay is currently on Openreach's clock for MSL purposes. Openreach is considered to have "direct control" over these non-customer delays, however Openreach cannot necessarily directly control where a customer places an order. For example, if an order is placed by a CP to a remote location, Openreach remains directly responsible for the entire duration of the order, regardless of the amount of dig, excavation or cabling that is required. Whilst this time is something Openreach is responsible for, it does not necessarily mean that Openreach can directly influence and control all of that time.

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[17]Source – Ofcom / Openreach discussion on Ethernet Quality of Service, 16 May 2018

107. As a principle, Openreach disagrees that *all* third party delays should be on Openreach's MSL "clock." In examples where wayleaves and traffic management are required, there can be lengthy delays that are outside of Openreach's control. For example, where legal contracts are being drawn up between two separate parties, or the wide variation in approach between local authorities which impacts timescales to obtain relevant traffic management permissions if a road needs digging up.

108. However, Openreach recognises that attempting to remove certain third party delays from the MSL measurement is difficult because:

- The MSLs, when set by Ofcom in 2016, were baselined on the fact that all "non-customer" delays were removed, so changing this policy would require a complete recalibration of the targets;
- It would be challenging to introduce a separation in assessment in parts of a delay that are within Openreach's control or not, e.g. the wayleave application process can be influenced by Openreach, however if the wayleave request is with lawyers or with a "middle-man" this part of the delay can remain completely outside of Openreach's control or influence. There currently is not a mechanism to separate the different parts of the process because it can bounce back and forward between different parties so would be complex to manage.

109. Therefore Openreach considers that Ofcom need to make the appropriate allowance within the MSL target to account for the increasing amount of complexity created by particular non-customer delays. This is because non-customer delays such as wayleaves and traffic management only form one part of the complexity issue that Openreach faces, so it is not as simple as removing these kinds of delay from the process.

MBORC Delays
"Delays which Openreach attributes to, for example, a force majeure event such as extreme weather conditions"

110. We are in the process of assessing the extent of provision MBORCs and will make further comments on this subject in further submissions.

Cost recovery

111. Openreach will be seeking the service improvements expected by Ofcom to be reflected any Leased Lines Charge control that Ofcom proposes to mandate. There are a number of medium and long term programmes in development which relate to quality of service for the provision of Ethernet products. An example of this is the contract and provisioning process change and the investment required to support this. We will be making later submissions on this in due course. We are working closely with Openreach colleagues who are managing the charge control interface into Ofcom to ensure that quality of service issues are raised as appropriate.

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5. Key Performance Indicators (KPIs)

KPIs reported to Ofcom

Openreach position and recommendation

112. The assessment of appropriate KPIs, as part of quality of service remedies, can often not be accorded the same priority as MSLs. Openreach is keen to avoid this as there is an inherent link between the KPI performance and MSLs. There is an opportunity to review the existing KPI set in more detail in this BCMR and we believe improvements can be made to make the KPIs provided to Ofcom more meaningful. We remain concerned that some of the existing KPIs are not meaningful or provide misleading information in part.

113. Openreach requests that a small number of amendments are made to the existing KPI direction to optimise the information being provided. Our full current recommendation is provided in Table 5:1, with rationale set out in the section below.

Table 5:1- Openreach KPI recommendations

KPI type	#	KPI name	KPI description
Speed	1	Mean time to provide (MTTP)	The average time that it takes to complete an order (in working days) from the point at which it was validated, to the point at which it was provisioned (excluding any customer delay).
	2	Lower percentile limit (LPL)	The percentage of orders completed in a time that was equal to or less than 29 working days (the lower percentile limit).
	3	Upper percentile limit (UPL)	The percentage of orders completed in a time that was more than 118 working days[18] (the upper percentile limit).
	4	Monitoring the tail	For the orders that took over 118 working days to be delivered, the average time to complete
Certainty	5	Delivery date certainty (iCDD)	The percentage of orders that were completed on or before their initial Contractual Delivery Date.

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[18]The number of working days is dependent on what is agreed to be the MSL

	6	iCDD MTTP (Cross-link)	The average time between the order validation date and the initial CDD given to the customer (excluding CP delay which occurred before the initial CDD issue date). Based on orders where the iCDD was provided in the relevant month.
	7	Mean Time to Issue iCDD (MTTi)	The average time it takes to issue an initial CDD - measured from the point at which the order was validated, to the point at which the initial CDD was issued (excluding customer delay between these two dates). Based on orders where the iCDD was provided in the relevant month.
	8	Mean Time to Issue iCDD - Upper percentile (Tail)	The percentage of orders where the "Mean time to Issue iCDD" (MTTi) is more than "X"[19] working days. Based on orders where the iCDD was provided in the relevant month.
	9	Mean Time to Issue (Lower percentile)	The percentage of orders where the MTTi is "Y" working days or less.[20] Based on orders where the iCDD was provided in the relevant month.
Open	10	Average age of open workstack	The average age of the open workstack taken as a snapshot on the last working day of the relevant month (excluding any customer delay).
Monitoring delay	11	Mean customer caused delay	For the orders that closed within the relevant period which had a CDD change due to a customer reason, the average delay in working days as a result of the CDD change.
	12	Instances of traffic management (volume)	For the orders closed within the relevant month, the volume of traffic management instances[21] (as a percentage of the total number of orders completed)
	13	Instances of traffic management (duration)	For the orders closed within the relevant month, the average duration of those traffic management instances

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[19]We are currently determining what this percentile looks like.
[20]We are currently determining what this percentile looks like
[21]Determined by the number of traffic management delay codes applied

	14	Instances of wayleave (volume)	For the orders closed within the relevant month, the volume of wayleave instances[22] (as a percentage of the total number of orders completed)
	15	Instances of wayleave (duration)	For the orders closed within the relevant period, the average duration of all wayleave occurrences
Repair	16	On-time repair	The percentage of faults where service was restored within 5 hours of being registered (excluding any customer delay).
Reporting criteria	Geography		Even though Openreach's operational regions have changed, we believe that the existing regions should remain for continuity of reporting, allowing for comparisons and to retain the country boundaries.
	Order category		Where Ofcom requires a KPI to be split by category, Openreach can continue to provide the category that has been provided, regardless of the process (please see Annex 1 for more information on categories)
	Customer		In the 2016 BCMR Ofcom required Openreach to split some of the KPIs by the top 9 CPs (determined by their order volumes between 2013 &2016) and an aggregated "other." This list of top 9 will have changed and Openreach believe there is scope to simplify this requirement to the top 7.
	BT / non-BT		Retain the existing process.

114. [✂].

Considerations and supporting evidence

115. Openreach recognises Ofcom's desire for Openreach to be transparent about the quality of service it provides, and is generally supportive of any requirement to provide specific measures to Ofcom on a regular

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[22]Determined by the number of wayleave delay codes applied

basis. In the 2016 BCMR, Ofcom set out three primary objectives for the transparency of quality of service (i.e. KPI) remedies:

      i. To monitor Openreach's compliance with the MSLs that had been imposed;

      ii. To monitor and provide visibility of Openreach's performance where Ofcom had not imposed any MSLs but may still be a concern to Ofcom, CPs or end-customers; and

      iii. To address concerns regarding discriminatory conduct on the quality of service provided to BT CPs and other CPs.[23]

116. Whereas items (i) and (iii) are quite objective in nature, item (ii) is more subjective and Openreach believes there could be improvements made to the KPIs in this area. In addition to providing information where there are existing or historic concerns, the KPIs should be useful and form a way of providing information to Ofcom where Openreach considers there are important trends to highlight, or to signal changes in the market.

117. As already indicated to Ofcom, Openreach believes that the KPIs can be made more meaningful with a relatively small number of amendments. As noted, the purpose of the KPIs should be to allow Ofcom to monitor key trends and highlight potential areas of interest, without heavily manipulation of the measures and being overly burdensome on either Ofcom or Openreach to manage. To this effect, Openreach suggests that the following principles are helpful in when determining how the KPIs can be of the most use:

1. **Openreach believes that the KPIs should be broadly in line with Openreach's existing measures.** This is because building new measures presents the risk of not having an existing historic baseline to act as a comparison. This makes it difficult to determine what "good" performance looks like, or if there are any issues with the measurement. Additionally building new measures on a strategic (systemised) basis is not only time consuming, but is complex to implement and test.

2. **KPIs should broadly be in line with Openreach's operational processes and be meaningful to CPs**. A valuable KPI should enable Openreach to identify and make improvements in a specific area, and should be in line with what CP customers want to see.

3. **KPIs should not drive the wrong behaviour by creating "pinch points" on specific parts in the process.** KPIs that drive distorted behaviour by focussing too much on particular parts of an order journey (as opposed to the end-to-end journey) can create unintended consequences, for example by shifting bottlenecks from one part of the order to another.

4. **KPIs should be simple and it should be clear what the KPI is measuring.** Straightforward KPIs create less risk in terms of avoiding overcomplicated logic and enabling the viewer to have a clear understanding of the construct with minimal layers of measurement.

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[23]BCMR Final Statement 28 April 2016, paragraph 13.703

118. By applying these principles to create a more straight forward set of KPIs, Openreach considers that Ofcom can simplify its approach to reviewing service performance in this market review and the future. For example, greater visibility of performance trends leading to more informed policy decisions.

Planning KPIs

119. Openreach recognises that planning performance (i.e. the time it takes for Openreach to provide a contractual date to the CP after the order being accepted) has been a continued area of interest from CPs and Ofcom.

120. Currently, the monitoring KPI on this area requests information on the percentage of orders that had an initial Contractual Delivery Date (iCDD) provided on or before 14 working days, once any customer caused delay had been removed.

121. This KPI was based on our contractual Service Level Agreement (SLA) which states that the contractual date will be provided to the CP *approximately* 14 working days after the order has been accepted[24]. The current construct of the KPI means it is not as reliable as possible for a number of reasons:

- The measure definition currently includes all orders that were **closed** in a particular month, which inevitably causes a delay in reporting. For example, for orders that closed in a given month, the iCDD will have been provided across a range of different months. For this reason, in relation to any KPI that monitors planning performance, Openreach recommends that the time taken to issue the iCDD in that particular month should be used as it allows for a more accurate and comparable assessment of orders. For example, in relation to all orders that had their iCDD issued in a particular month, what was the average time to provide that iCDD.
- There exists a risk that the KPI could drive the wrong operational behaviour i.e. Openreach planners may issue an iCDD date because the order is at day 14, when it may be possible to derive a more accurate date at a later time.
- Where an order has not met the SLA, i.e. an iCDD had not been provided by working day 14, the KPI is not able to provide any insight on how long it took to provide the iCDD, i.e. it could have taken one further day, or a further 10 days – there is no way of distinguishing.

Recommendations for planning KPIs

122. Openreach believes that a small collection of new KPIs could provide more value in monitoring the planning stage of the order journey than the existing arrangement. Our current thinking is as follows:

1) **Mean time to issue iCDD (MTTI):** Could be defined as the average duration of time taken to issue the initial CDD - from the point at which the order was validated, to the point at which the initial CDD was issued (excluding customer delay between these two dates).

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[24]Connectivity Service Agreement, Schedule 2, para 4.5

2) **MTTI Upper Percentile:** Could be defined as the percentage of orders where the "Mean time to issue iCDD" (MTTi) is more than "X" working days, where we are still determining the value of "X."

3) **MTTI Lower Percentile:** Could be defined as the percentage of orders where the MTTi is "Y" working days or less, where we are still determining the value of "Y."

123. Openreach considers there are valuable advantages of using these alternative KPIs to assess planning performance:

- These KPIs do not directly drive Openreach planners to issue an iCDD by day 14, if they are not ready to do so.
- The KPIs monitor the overall average speed of this part of the order journey, and monitor performance of the planning 'tail' orders, as well as showing improvements for the quickest orders. This is designed in the same way as the overall MTTP speed KPIs.
- These new KPIs mean that more insight is provided into the complexities around iCDD setting and the different dimensions involved:
    o Firstly by monitoring the speed of issuing the iCDD - through KPIs MTTI & MTTI Tail
    o Secondly by monitoring the duration period of the iCDD - through the crosslink measure o Thirdly by targeting the 'certainty' of meeting the iCDD – with the current certainty MSL.

124. We will continue to engage with Ofcom in relation to these new KPIs to determine what the most appropriate metric is.

125. Openreach has considered whether there could be any enhancements to the "Order Validation" KPI, which measures the performance against the SLA[25]. However, Openreach's current expectation is that most (if not all) of new Ethernet provide orders will be placed over EMP from April 2019 onwards and we are currently in the process of migrating existing orders over to this platform. This will mean that the Order Validation process is fully automated. Therefore we consider there is no value in retaining the existing KPI (as it is expected to remain at c. 100%) and there is no value in measuring the time to validate as it will be an automated process.

Recommendations around planning MSLs

126. Openreach strongly recommends that Ofcom do not place a target MSL on planning performance, for a number of reasons:

- There is not enough analysis regarding what the right measure should be in terms of the construct or the target. Openreach have attempted to determine what a useful and insightful metric would look like and our recommendation is that these are created as monitoring KPIs.

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[25]On legacy systems the SLA is to validate the order by the end of the next working day. On EMP there is an SLA of 3 clock hours and is system driven.

- The amount of time that Openreach spends planning an order is impacted by the complexity of an order. An order that requires a complex amount of build with several third party permissions will necessarily take longer than an order that does not require a survey. Openreach should not be penalised for taking longer to plan an order to provide the customer with a more accurate date.

- Openreach has to comply with the certainty MSL (percentage of orders completed by their iCDD) and an MSL on planning would detract from this priority. This is because the ability to meet an MSL on planning is able to be influenced much earlier in the delivery process, so could actually cause certainty performance to fall if Openreach are encouraged to provide iCDDs quicker. We believe that the proposed KPIs above provide transparency in this area.

- The evidence from process improvements over the last two years is that poorly planned circuits encounter more un-forecasted delays and are subject to a higher % of re-plans. Incentivising planning for all circuits to be completed faster is therefore likely to lead to detrimental outcomes such as worse delivery timescales and poorer customer experience.

- Under our existing provisioning process, any wayleaves are usually secured before the iCDD is provided. This is because the time taken to obtain a wayleave can become completely outside of Openreach's control and therefore performance against the certainty MSL would be impacted if we did not have this obtained before providing a firm date to the customer. If Ofcom imposed an MSL on the time taken to plan an order or the proportion of orders that had to be planned in a particular period of time, orders that had a long wayleave process would almost always fail. To note, all of the time required to secure the wayleave is currently on Openreach's "speed" MSL clock, so there already exists an incentive to complete this activity as quickly as possible.

- As noted later in this submission, Openreach are currently reviewing its end-to-end process and the planning process and related contractual provisions are likely to change as a result. A KPI would not prevent these changes going ahead, whereas a new and potentially ill-formed MSL could significantly impact our ability to improve the overall process for the better for end-customers and CPs.

127. Openreach believes that an MSL on planning could actually create unintended consequences. However, we remain committed to finding the right solutions to improving planning performance and have a number of improvement initiatives in place.

KPIs reported publicly

Openreach position and recommendation

128. Openreach is supportive of Ofcom's transparency objectives, and agrees that the measures reported publicly should be broadly in line with those measures that have an associated MSL target.

129. However, we are keen to ensure that the public KPI website remains as straight forward as possible for those consuming the information. To this end, it is our view that there is scope to remove the lower percentile measure from the public KPI requirements in order to simplify the information that is provided on the website.

Considerations and supporting evidence

130. The measures published, despite being metrics that CPs are familiar with, are not necessarily metrics that end-customers are familiar with. For example, the Mean Time To Provide (MTTP) metric is published, but necessarily removes CP or end-customer delay from the result. It therefore may not reflect the overall time that an end-customer experienced. There are also a number of exclusions that need to be qualified on the website (e.g. geographic market and product markets), which can be complicated to a new user.

131. Openreach recognises the desire from Ofcom to have these measures made publicly available, but for the reasons set out above we believe that the site could be simplified to show just MTTP, Upper percentile, Certainty and repair.

132. We will provide further comments in relation to the public KPIs in later submissions.

6. QoS SMP Condition

Openreach position and recommendation

133. Openreach's view is that the existing arrangement should be maintained, i.e. that there should remain a separate SMP condition related to quality of service, on which relevant directions can based (e.g. the MSL direction). This will make it easier for Ofcom to make modifications to the regime should it be necessary during the course of the regulated period.

134. Openreach considers that within the next regulated period there will almost certainly be significant changes in the market, some of which could have an impact on our ability to meet the MSLs. [✂].

135. Therefore we request that Ofcom remains open to considering these kinds of market factors on Openreach's ability to meet any future MSLs.

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7. Provision Service Level Guarantees

Openreach position and recommendation

136. The regulatory arrangements for Ethernet provision Service Level Guarantees (SLGs) were first imposed by Ofcom in 2008[26] and haven't changed since.

137. The requirements include that BT (Openreach) make proactive payments of one month's line rental per day up to a maximum of 60 days for each day beyond the contractual delivery date (CDD). Ofcom also set out that any extension of a CDD beyond the 57th day would be subject to the consent of the CP affected (not to be unreasonably withheld).

138. Openreach considers that the time is right to review and make the following changes to the SLG scheme:
- A revision to the current SLG quantum, from one which is set well beyond any reasonable pre-estimate of an average Communication Provider's (CP's) loss, and so is in our view excessive, to one based on a sensible average pre-estimate of loss (PEOL); and
- An amendment to the structure of the SLG, in particular removal of the requirement to obtain CP consent for CDDs that are set beyond day 57. This change is needed to facilitate an important part of the Contract Review Project that Openreach proposes to deliver and that will unlock further service benefits for end customers.

139. Openreach considers that these two changes are separable, and that Ofcom should include a review of the Ethernet provision SLG arrangements as part of its wider review of BCMR QoS remedies.

140. [✂].

Considerations and supporting evidence – SLG quantum

141. Openreach considers that the current quantum of one month's line rental per day over the CDD (up to a maximum of 60 days) is excessive, and that the SLG quantum should be based on a reasonable pre-estimate of an average CPs loss.

142. There is good regulatory precedent for using a PEOL based approach to calculate an appropriate quantum. This includes Ofcom's guidance in the 2008 Direction about the features that a fair and reasonable SLG scheme should have[27], and also the manner in which Ofcom sought to establish if an earlier Openreach SLG quantum was fair and reasonable in a regulatory dispute.[28]

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[26]Service Level Guarantees: incentivising performance. Statement and Directions March 2008.
[27] See Service Level Guarantees: incentivising performance. Statement and Directions March 2008, paragraph 3.4.
[28]Dispute relating to whether Openreach offered MPF New Provide to TalkTalk Telecom Group PLC on fair and reasonable terms and conditions. Statement 15 August 2013, Section 4.

143. In 2015 Openreach commenced negotiations with industry, under the auspices of the OTA2 facilitated process set down by Ofcom in the 2014 FAMR,[29] to make changes to the Ethernet provision SLG scheme.

144. To support its proposals in the negotiation process, Openreach developed a detailed PEOL model, which was amended over time to take account of some of the feedback from OTA2 and industry. This model showed (and continued to show) that the prevailing SLG quantum was set well beyond any reasonable average CP PEOL.

145. Despite being extended well beyond their normal duration, the industry negotiations ultimately failed, and in December 2017 they were closed down by the OTA2 on the grounds that there was no prospect for agreement being reached. Openreach understands that OTA2 has subsequently discussed this matter with Ofcom (in line with the process set out by the Ofcom stipulated negotiation framework).

146. Although not all CPs were of the same view in the negotiations, Openreach does consider that the overly generous quantum currently on offer means that a number of CPs have little incentive to move.

147. As summarised in Table 7:1 below, Openreach's PEOL model includes three types of loss, against each of which we created a set of assumptions and calculations. In addition, Openreach reviewed and excluded three further types of loss, which we did not consider should reasonably form part of a SLG payment.

*Table 7:1 [✂]*

[✂]

148. [✂].

149. [✂]:
- [✂]
- [✂]

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[29] See Fixed Access Markey Reviews volume 1. Statement 26 June 2014 paragraphs 11.394 to 11.431.

- [✂]

150. A more detailed explanation of the PEOL model and the assumptions that underpin it is contained in [✂], which accompanies this document (and will be sent separately).

151. Openreach believes that such a quantum would be fair and reasonable, and remain generous when compared to arrangements offered by other incumbents in regulated markets. As shown in Figure 7:1 below, the Openreach quantum is dramatically greater than those offered by other European incumbents. This further suggests that the existing Openreach quantum is out of kilter with what a reasonable level should be. Please note that Openreach will be updating its international benchmarking analysis, and expects to have updated analysis to share with Ofcom the late summer 2018.

Figure 7:1 [✂]

[✂]
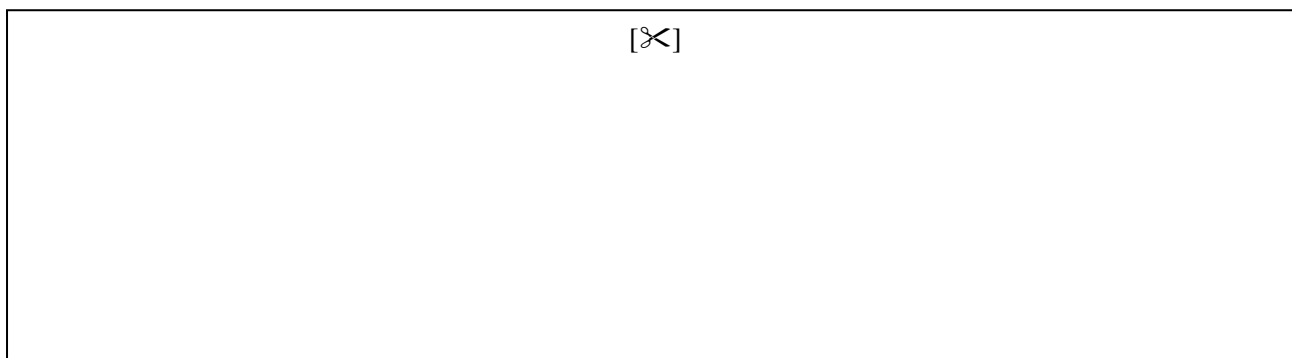
Considerations and supporting evidence – SLG structure

152. As discussed in more detail below, Openreach has commenced delivery of a transformational project, referred to here as the Contract Review Project (positioned to industry under the banner of "Re-imagining Ethernet").

153. This project is being rolled out to deliver further service improvements to end customers by improving the efficiency of the end to end operational delivery processes involving Openreach and CPs.

154. One of the key improvements that the Contract Review Project aims to deliver is an improvement to the process that industry uses for selecting delivery dates, and the ruleset for making changes to delivery dates once they have been set (i.e. date management).

155. The improved (i.e. desired state) date management process for selecting and progressing delivery dates is summarised in Figure 7:2 below. Features of the improved process include:

- No default 30 working day lead time, with initial CDDs (iCDDs) set without the use of deemed consent (crosslink MSL would ensure that iCDD were set competitively);
- No Openreach changes once the date is set, subject to some specific and limited carve outs e.g. certain wayleave scenarios;

- Fewer, clearer, automated "customer delay" scenarios that can change the CDD;
- Reduced operational overhead for Openreach and CPs.

Figure 7:2– Improved date management process (desired state)

| Process steps | Decision points | CP DC delay | Openreach DC delay | End |
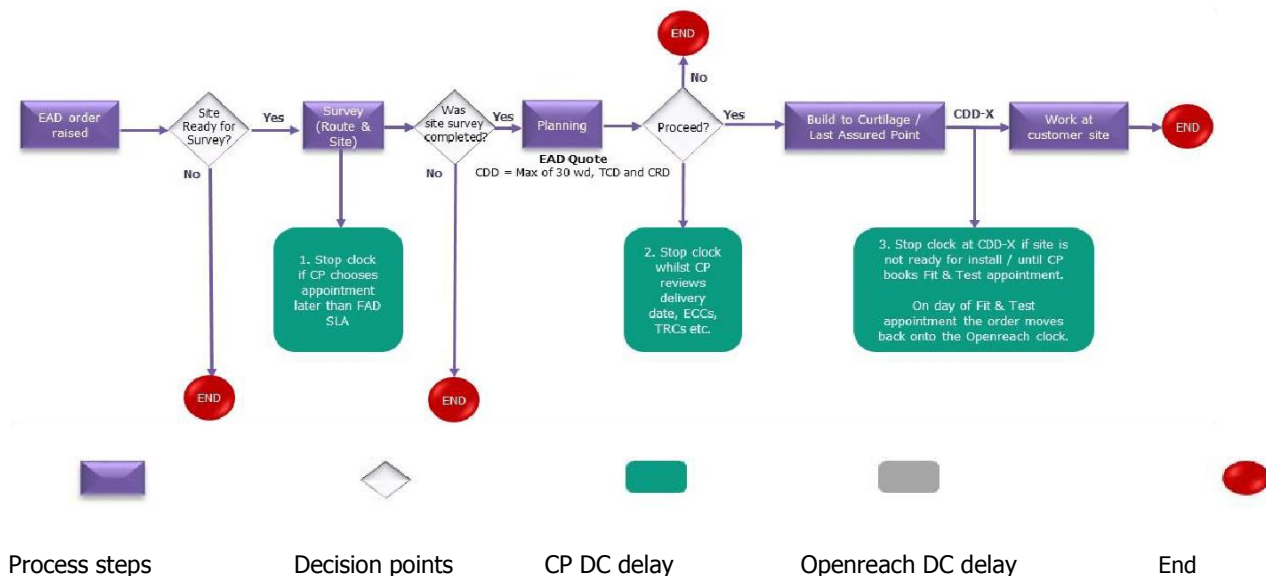
156. A central component of the proposal is to remove restrictions on how we set the iCDD so that we can set more realistic but competitive dates (note the "Crosslink" MSL). As part of this proposal we will stop using Openreach / 3rd party deemed consent after the iCDD has been set (with some limited carve outs).

157. We believe that this process offers a number of potential benefits for end customers and CPs, including better certainty, combined with a simpler and clearer date management ruleset that can be automated via the Equivalence Management Platform (EMP) moving away from the existing deemed consent processes, that are complex and require significant manual intervention.

158. However, we also consider that changes are needed to the Openreach contract (see the next section for more detail) and also to existing regulation in order to facilitate the changes that are sought, and so enable the potential service benefits to be realised.

159. In relation to the regulatory changes needed, in the existing 2008 SLG Direction (whose terms have been simply rolled forward in subsequent BCMR reviews), one requirement is that if iCDDs are set greater than 57 days, then CP consent is needed. We consider that this requirement is inconsistent with the improved date management process that we are proposing to move to.

160. Openreach must avoid putting itself in a situation where it could be non-compliant with SMP obligations, and so we believe that a change is needed to the existing SLG remedy in order to facilitate the planned date management improvements.

161. To note, we do <u>not</u> consider that aligning the SLG regulatory remedy to better align with our improved date management process would in any way represent a watering down of the SLG remedy.

162. We would like Ofcom to consider means to replace the "57 day unless CP consent obtained" with a statement that simply references the iCDD (in simple terms, payments would become due in circumstances where we delivered later than the iCDD, subject to customer delays and wayleaves).

163. The SLG would continue to apply if Openreach failed to deliver the circuit to the final CDD on the order. As noted, our proposal is also to stop using Openreach and 3rd party deemed consent once the iCDD has been set, which will increase Openreach's risk, and will provide another incentive to improve the accuracy of the iCDD, thereby improving certainty and reducing SLG payments.

164. Openreach considers that the approach Ofcom took in the WLA could work here, where the 2008 SLG Direction is dis-applied, and SLG obligations (provided these didn't include the 57 day clause) are written into what the Openreach Reference Offer is required to cover.

165. Given the desired timescales of the Contract Review Project, and the risk of CP inertia in relation to changes to the SLG scheme, Openreach considers that regulatory intervention is needed to help deliver the structural changes to the SLG remedy needed to facilitate the Contract Review Project.

Further comments

166. Openreach considers that other features of the SLG scheme should be retained, including in relation to product scope, order types that SLGs apply to and the 60 working day upper limit cap on compensation.

167. Openreach also considers that the process set up by Ofcom for negotiation to existing / creation of new SLGs has generally worked well and should be retained. That said, in this case, we do believe that the regulatory backstop that exists in the process does need to be invoked as the next step to guarantee progress.

8. Contract / process review

Openreach position and recommendation

168. Openreach recently commenced CP engagement (under the banner of "Re-imagining Ethernet") on a major service transformation initiative referred to in this document as the Contract Review Project.

169. As discussed earlier in this document, Openreach has delivered significant improvements to Ethernet service in recent years, and service is already at good levels in most areas. Delivering further incremental improvements is becoming more difficult as we move in many areas to an efficient level of operation.

170. We have identified a set of changes that focus on improving end to end (i.e. involving Openreach and CPs) operational efficiency and deliver a better experience for end customers – through clarified responsibilities and

handoffs, more flexibility and choice, increased order fluidity and less delay. A high level summary of the proposed changes and the benefits arising is shown in Figure 8:1 below.

Figure 8:1 [✂]

[✂]
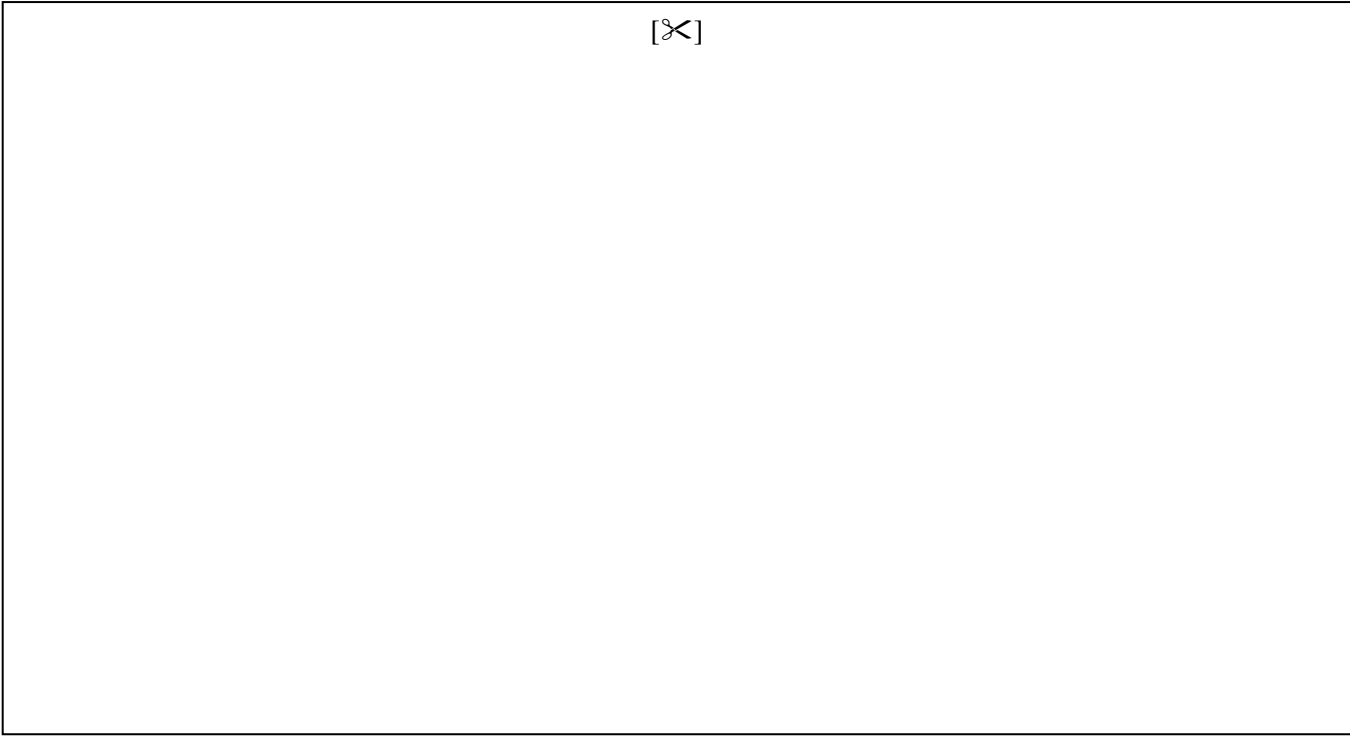
Considerations and supporting evidence

171. There will be impacts for CPs. For example, they will need to implement process changes within their own operational estates. We think the resulting improvement to end customer experience justifies the changes, but we understand that CPs will need to evaluate that for themselves, and experience tells us (for example noting the experience in relation to DOJ) that there is a possibility that we will not get full industry agreement to our proposals.

172. [✂].

173. [✂]. The process of CP engagement commenced in June 2018.

174. [✂].

175. We are confident that delivering the changes proposed will create benefits for end customers of Ethernet services and CPs, [✂].

176. [✂]:
- [✂];
- [✂]
- [✂].

177. Openreach will continue to keep Ofcom updated as the project moves forward.

9. Other considerations

Duct & Pole Access

178. It is clear that Duct & Pole Access (DPA) is Ofcom's focus for the future of wholesale telecommunications access. Sharon White was quoted as stating that Ofcom have "put [their] weight behind opening up Openreach's telegraph poles and underground ducts, making it quicker and cheaper for other operators to build networks. This reform could transform the economics of full-fibre investment. It is, in my view, Ofcom's single, most important intervention[31]."

179. Whilst this remedy could bring benefits in terms of increased competition, further consideration is needed in relation to how the new regulations imposed on the use of Openreach's infrastructure will impact the service delivery of the existing BCMR portfolio. Specifically, Ofcom need to take account of how DPA will impact on the other Quality of Service remedies imposed, such as the MSLs. In this BCMR, Ofcom need to properly consider how to set service targets when Ofcom's significant new obligations are highly likely to have an impact on Openreach's ability to meet those levels.

180. As Ofcom acknowledges above, DPA is likely to mean that the degree of intervention in Openreach's network will significantly increase over time. This could have several impacts that need further exploration:

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[30]The end to end implementation phase is being scoped, and will require process and systems changes (via EMP) to be delivered.
[31]Sharon White, Ofcom, Building a Full-Fibre Future event

A) Fault rates

Increased intervention in the network will inevitably lead to more faults. This will be a natural effect of more parties opening up and working in Openreach's infrastructure. At this time, it is not known by how much this will impact the fault rate but it is likely to increase it. Ofcom should be mindful of this if this leads to more resource needing to be directed towards repair activities from provision and the complexity of those repairs where multiple CPs may be impacted and need to be coordinated.

B) Capacity

At present, we do not know where the existing fibre capacity will be used up, how quickly and by how much. When setting MSLs on BCMR services, Ofcom need to be aware that lead times could be impacted if existing capacity is exhausted by other operators building networks in Openreach's infrastructure. [✂]. This will most certainly have an impact on products subject to MSLs, in terms of speed and certainty of delivery.

C) Type and complexity of work

[✂].

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[32][✂].

D) Repeat locations

Local councils will be reluctant to grant permissions for traffic management requirements in the same area if successive requests are made. For example, if a DPA operator has the relevant permissions granted to build network in a particular road, and shortly after, Openreach receives an EAD order which requires traffic management in the same location (but could not have known in advance that the order would require this routing), then the local council may be reluctant for the same road to be disrupted twice in a short period of time. Therefore they may decide not to grant permission for the work to take place for a period of several months. In this example, Openreach will be significantly impacted from a speed and certainty MSL perspective because of the additional delay in waiting for relevant permissions and traffic management to be put in place.

E) [✂]

[✂].

181. Currently, there are a number of "unknowns" surrounding DPA and the impacts on regulated remedies in the QoS space. Openreach has not at this stage received sufficient forecasting information to attempt to model the impact on service, but is something we will develop in time, along with any other impact assessment and analysis. In our view, Ofcom needs to consider the scenarios described above. We are seeking Ofcom's recognition of these potential impacts and agreement to review the QoS remedies should DPA have directly or indirectly an impact on Openreach's ability to comply with those remedies. We also envisage follow ups with Ofcom on this subject at later stages of the consultation process.

Equivalence Management Platform

182. By Spring 2019, our current plan of record is for all new EAD provides to be ordered and delivered via the EMP platform, and we are currently migrating all existing assets over.

183. While the quality of service remedies should be agnostic of the underlying technology used for circuit delivery and repair, we consider that it is important that Openreach take Ofcom through the design of EMP and the differences between the EMP and legacy processes such that points of detail that relevant to Ofcom's remedies are taken into account.

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Volatility of demand

184. If Openreach is hit by volatile / unforecast demand, this can have a significant impact on our delivery performance, which can be particularly acute in local geographies. There are some potentially very large future projects where, certainty and timing of demand is currently unknown, and which could therefore cause significant impacts to service performance, including the MSLs.

185. [✕].

186. [✕].

187. [✕].

188. [✕].

189. [✕].

190. We are currently considering how volatile / unforecast demand can be managed, but at an absolute minimum we would expect Ofcom to take such events into consideration in any MSL compliance period, as required.

10.   Next steps

191. We trust that this document is helpful to Ofcom in setting out Openreach's current views on what the right specification should be for the QoS remedies.

192. As noted throughout the document, Openreach will be providing further information to Ofcom during the remaining course of the BCMR consultation. Openreach would also be happy to deal with any questions (or receive any comments) that Ofcom have in relation to this document.

Annex 1
CATEGORY DOCUMENT

Openreach Ethernet order categorisation process

Background & context for 2019 BCMR

The purpose of this document is to provide context and background on the Ethernet order categorisation process to Ofcom. It is not intended to replace but to complement the voluntary submission which we will send to Ofcom in due course.

Introduction

Openreach uses a numerical categorisation of Ethernet orders on a per circuit basis to provide an indication, at the point of the planning stage, of the expected operational activities required to deliver the circuit.

The categorisation is centred purely around the engineering work which we expect may be required for network delivery at a certain point in time (i.e. when the categorisation is designated) based on a number of criteria available at that point in time (see below). It does not take into account other factors which may lengthen the delivery time of an order or make it more "complex" to deliver (for example, if a wayleave is required, the dig distance required for new network build etc). It only applies for "Provide" order types, and it is usually only applied for EAD products.

Ofcom should note that the categorisation of an order does not always reflect the engineering requirements of a completed order. This is because the circuit categorisation is registered on the system at the beginning of the delivery process, and is not subsequently changed. This means that if changes in the engineering work arise at a later stage (for example, because the need for additional work becomes apparent at a later stage and after the category has been attributed by the planning team), this will not be reflected into a category change.

This submission also outlines the changes which have been implemented over the last 2-3 years in the way that Openreach categorises circuits, and sets out why the category of an order, taken on its own, is not a suitable measure of complexity.

Changes to the Openreach Ethernet order categorisation process

Table 1 describes the order categories which Openreach used for EAD products up until Spring 2016.

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Table 2 - Old categorisation system

Category	Description
1	Fibre connection available between customer's premises. Possible installation and connection of fibre and equipment within the customer's premises and service testing and commissioning required.
2	Fibre connection is available between Openreach network distribution nodes. In addition to possible category 1 activities installation of duct and fibre (cable or tubing with blown fibre) is required from Openreach network distribution node(s) to the customer's premises.
3	In addition to possible category 1 and 2 activities a new spine fibre connection is required in part or whole between Openreach distribution nodes and serving exchange.
4	In addition to possible category 1, 2 or 3 activities a new core fibre cable is required between exchanges.

Up to Spring 2016, Openreach planners would allocate a category as early as possible at the validation stage of the order journey and in a number of cases, this would occur before a survey had taken place.

At that time, the Openreach planners only had 4 categories to select from and each order was open to the planner's individual interpretation. The definitions and descriptions of each category were rather broad in comparison to the detail available in Tables 2 and 3 (which set out the new categorisation process that is now being used).

During Spring 2016, Openreach revised the categories (originally as part of the Differentiated Order Journey (DOJ) trial) in order to provide more detailed and granular order categories to customers.

Table 2 describes the new categories, which are in place today.

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Table 3 - New categorisation system

Category	Description
Cat 1.1	Previously known as a 'Quick Win', keeping the same agreed definition. Quick Wins need no ECCs, no duct work (new or clearance), splice only where fibre exists and with a fibre blow of up to 600m either way from the central point externally, or 150m internally to connect to desired NTE location.
Cat 1.2	There is no requirement to build the network as spine (customer node & network node) and Cable Junction (CJ) capacity is seen to exist. The only requirement on a category 1.2 from the external provision team will be a blow and/or splice. The external blow will be over 600m or over 150m internal blow to connect to desired NTE location.
Cat 2.1	Within this category there is a requirement for Cabling/Tubing activities, before Blow & Splice, anywhere from the node up to the termination point. As a result Rod & Tube activities will exist on the job but there will not be the requirement for new duct Provision within this category.
Cat 2.2	Within this category there is a requirement for Cabling/Tubing activities, before Blow & Splice, anywhere from the node up to the termination point. As a result DRT or RTC activities will exist on the job and new duct Provision will be needed within this category.
Cat 3	This category will only be used when a new Spine or spine extension is required and planned. The output from planning will be the generation of a Local Line Optical Fibre Spine Cable (LFSC) estimate. Once an LFSC is issued, the provision Category automatically becomes a Cat 3.
Cat 4.1	Relates specifically to the provision of a tie cable to be provided by BT Technology (formerly BT Technology Services and Operations (TSO).
Cat 4.2	Dependent on end to end CJ Cable availability. This will not be generated by Service Planners as this relates to new CJ provision and can only be answered as a result of core cable activities being completed. Relates specifically to the provision of a core cable (i.e. an exchange to exchange circuit).

Together with the adoption of new categories, Openreach planners are provided with guidance to help them assess each order in more detail. Table 3 provides the guidance which is provided to the planning teams to help them identify the appropriate categorisation for an order.

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Table 4 - Detailed categorisation matrix

	Splice	External fibre blow	Internal fibre blow	Cabling required	Duct required	New spine or spine extension required	New CJ connectivity required	ECCs required
CAT 1.1	Permitted	Up to 600m each way from central point (1200m total)	Up to 150m	No	No	No	No	No
CAT 1.2	Permitted	Over 600m	Over 150m	No	No	No	No	No
CAT 2.1	Permitted	Permitted	Permitted	Yes: Anywhere between node and termination point	No	No	No	Permitted
CAT 2.2	Permitted	Permitted	Permitted	Yes: Anywhere between node and termination point	Yes	No	No	Permitted
CAT 3	Permitted	Permitted	Permitted	Permitted	Permitted	Yes	No	Permitted
CAT 4.1	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	TSO Tie Cable	Permitted
CAT 4.2	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Yes Core Cable	Permitted

In addition, Openreach planners can instigate a survey before a category is applied to an order. This ensures a more accurate categorisation and better lead times for the customer.

It remains the case that once a category is set, it cannot be changed anymore, and therefore, the category could become inaccurate in circumstances where delivery requirements changed post setting of that category (for example, if a duct was discovered to be blocked, and duct clearance was required).

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Issues with comparing old categories with new categories

The two categorisation processes cannot be simply merged together. For example an 'old' Category 1 is not the same as a combination of 'new' Category 1.1 and 1.2 orders; similarly an old Category 2 is not the same as a combination of Category 2.1 and 2.2 orders[33]. In fact it is not possible to reliably determine how an order categorised under the new process would have been categorised under the old process.

Worked example: Under the new process, if an order required over 600m of blown fibre, a Category 1.2 would be allocated. However, under the old process, a similar order may have been categorised either as a Category 1 or a Category 2.

Other issues to be considered when reviewing categories of orders are:

- Categorisation is a manual process and is based on an individual planner's assessment of the order.

- A number of initiatives have been implemented to improve the consistency and accuracy of the categorisation process. For example, planning triage processes and enhanced surveys, leading to reduced workstacks and faster delivery of "quick win" orders due to better identification.

- There was not an immediate overnight switch from the old system to the new system. Instead the new process was implemented under a phased approach, starting as a geographic trial on the legacy platform with patches in the North of the country, and then phased over the rest of the country as the programme launched for all orders on the legacy platform during the spring and summer of 2016. The new process was then implemented on the Equivalence Management Platform (EMP) system in late 2017 meaning any orders placed on EMP prior to this date do not have the more granular categorisation.

  As the majority of the BCMR KPIs are based on closed orders, this means that it is not as easy to see the shift of categorisation as the closed orders in a period will have a mixture of orders both pre, and post, the DOJ trial. Historically, Category 1 orders were used to classify the 'easiest' orders – known as "Quick Wins" – and most closely related to Category 1.1 orders today. Planners would usually use Category 2 to classify any orders which required an amount of engineering work, whereas now if the amount of work was not too significant, the order might be categorised as Cat 1.2.

- This implies that there has not been a prolonged period of time with the same categorisation process. The graphs below illustrate this point.

Figure 1 shows the monthly intake of <u>all</u> Category 1 and 2 versions from both the old and the new processes.

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[33]To note, an old category 3 is the same as a new category 3, and an old category 4 has been split out into 4.1 and 4.2.
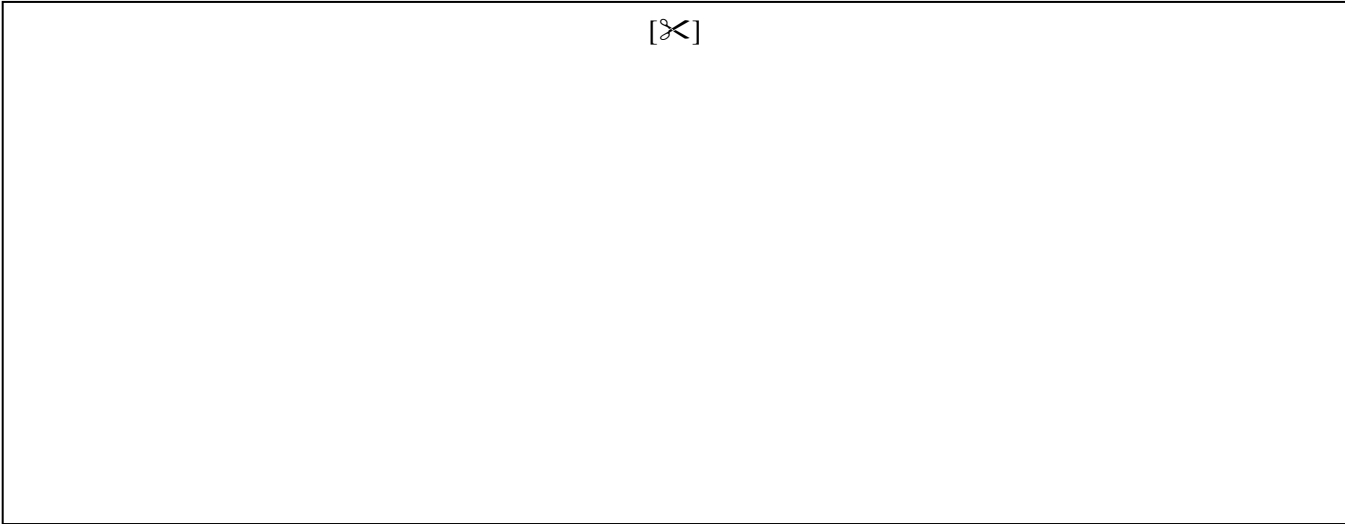
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[✂]

Figure 1

In Figure 2, we have divided the graph into 3 distinct time periods (see figure 2 below):

- Period 1: Shows the phased migration of the new categorisation process for orders on the legacy platform.
- Period 2: Displays a period of categorisation stability on the legacy platform.

  However during this period, the volume of Category 1 and Category 2 orders increase slightly as more orders are accepted on the EMP platform - which had not yet migrated to the new process.
- Period 3: The new categorisation process is implemented on EMP with old style Category 1 and Category 2 options being phased out.
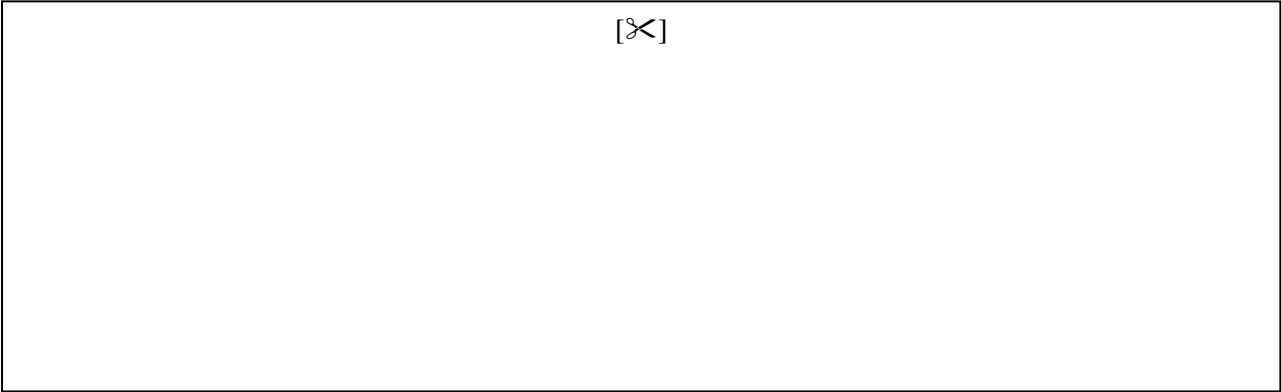
[✂]

Figure 2

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Complexity cannot be solely measured by order category

The purpose of grouping orders into categories is not to create a comprehensive measure of complexity. It is to help Openreach's operational teams deal with orders more efficiently by grouping orders that share some specific delivery characteristics which will help define orders' engineering requirements and from there, how orders will be dealt with. Orders that are categorised as the same in terms of the pure engineering work required can be vastly different in other areas of delivery, such as whether permits or permissions are required, and geographical variations.

Order complexity in Ethernet is multi-dimensional and there is not a single indicator that describes the overall complexity of an order across all the dimensions of complexity. In reality Ethernet orders are highly bespoke in nature, and so trying to understand true engineering complexity is itself a complex exercise that needs to consider a range of inputs.

For example, under the current categorisation system, all EAD provide orders that require cabling between node and termination point and do not require duct, BT Technology cable or tie cable will be classified as Category 2.1 orders. But within this group of Category 2.1 orders there will be a significant degree of variability in complexity:

- Some orders will require only a few meters of cabling whereas others will require several kilometres; There is an infinite level of variation in the difficulty of inserting the cable into the duct. In some cases the duct in which the cabling will go will have plenty of space and be in good condition making the job relatively easy, while in other cases it will not. Where an issue does arise, this will significantly increase the complexity of completing the circuit as additional unforeseen engineering work will need to be conducted. For instance, some manholes will be easily accessible, while others will not, and some manholes may be flooded, while others will not.

- The degree of rurality will vary, with some orders being easily accessible and others being in inaccessible locations such as a remote island with infrequent ferry service. This is not reflected within the categorisation.

- Some orders will require wayleaves and others will not. The requirement of a wayleave is not included in the categorisation of an order. Where orders require wayleaves, there will be variation, as:

  - Some will only require one wayleave, while others will require multiple wayleaves.
  - Some will require only first party wayleaves, while others will require third party wayleaves and some might require both.
  - Some third party wayleaves may be with landlords that are cooperative while others may be with landlords that are obstructive, while others may be with landlords where Openreach has a pre-existing agreement on wayleaves making the wayleave process more automated.

- Some orders will require traffic management and others will not. The ones that do will also vary, as:

  - Some will require only one instance while others will require multiple instances.
  - Some of these may be under the licencing regime, others may be under the permitting regime.

- The amount and complexity of work regarding splicing and blowing fibre will also vary for each order.

There could be further variations across additional dimensions of complexity, not included in the examples given above. However, the above demonstrates the order category on its own is not sufficient to explain the varying degrees of complexity for each order.

In addition using the order category as a proxy for complexity raises other issues:

- As mentioned above, the order category is set at the beginning of the delivery process based on what is known at the time and the information available. The actual complexity is only known in full once the order has been completed, as in some cases unforeseen complexities appear after the order category has been set. When this happens the order category will not change. Therefore there will be a small proportion of orders in the lowest and supposedly least complex categories (e.g. Category 1, Category 1.1) that will turn out to be very complex and hence will fail the Upper percentile MSL.

- Based on the specific circumstances of the order (see Table 3), it is possible that orders in Category 3 and above are not necessarily more complex than Category 1 or Category 2 orders. They simply require a specific type of activity (new Spine or tie cable) but they may or may not require cabling or duct between the node and the termination point. Therefore, some Category 3 and 4 orders will be less complex than Category 2 orders.

Our analysis has shown that whilst the most simple orders to deliver are becoming even simpler (due to process improvements and expansion of our network footprint in specific places), at the same time at the other end of the complexity spectrum, the orders that have complex dependencies (such as where a wayleave is required, or geographic issues arise) are becoming harder to deliver. We are currently evaluating this and will provide more information to Ofcom as part of our next voluntary submission.

Summary

The categorisation process is only one part of a detailed assessment exercise to assess the complexity of delivering an order. Ethernet is not a pre-built national network and as such circuits are built on the basis of the requirements of the customer, and tend to be quite bespoke in nature. The bespoke nature of many Ethernet orders means that categorising orders into a defined and limited number of "types" has inevitable limitations.

It is key to understand that order categorisation cannot be used solely to assess trends in complexity, and whether Ethernet circuits are getting harder or easier to deliver. The above submission has shown that:

- Order categorisation on its own does not provide a robust measure of underlying operational complexity; and
- Changes in order categorisation over time means that there are limitations in conducting longer term trend analysis. In particular, category 1 and 2 orders cannot be directly compared over time due to changes in categorisation processes.