

Your response

Question	Your response
<p>Question 1: Please provide a description of your current use of fixed links (or indicate which of the use types in Table 3.1 best describe your use type)</p>	<p>Confidential? –N</p> <p>We currently use L6, U6, 7, 7.5, 13, 18, 23, 38 & E band links across our estate of remote radio sites. These are used for MW links for transporting the RT voice traffic back to our operator control centres.</p>
<p>Question 2: What are the factors driving your choice of fixed links over alternative connectivity solutions, and which factors have the biggest impact on your decisions? Is this likely to change in the next 5 years? If so, what do you expect will change?</p>	<p>Confidential? –N</p> <p>Remoteness of sites, rural locations where difficult to get fibre/copper connectivity too.</p> <p>This is unlikely to change in the next 5 years. We have implemented these links for a 15-year lifespan.</p>
<p>Question 3: Is the current spectrum available for fixed links in the UK suitable and sufficient for your needs? If not, what would you change and why? If you believe changes are required, please give specific examples and reasons along with supporting evidence if available.</p>	<p>Confidential? –N</p> <p>Yes, the current spectrum is suitable in meeting our requirements.</p>
<p>Question 4: Is there anything about Ofcom’s current framework for authorising fixed links which you consider could be improved?</p>	<p>Confidential? –N</p> <p>When you’re asking for parameter changes to our application, and then this change affects other parameters which we get asked to change again. This delays the licence application, if the change required is multiple please let us know in the first instance.</p>
<p>Question 5: How has your use of fixed links changed between 2016 and now? Please provide information on:</p> <ul style="list-style-type: none"> - Reasons for increase or decrease in the number of your links since 2016; - Changes in the capacity of your links since 2016, including how you have delivered this capacity change, e.g., different channel bandwidths, different link technology (please specify), etc. 	<p>Confidential? –N</p> <p>Our use of fixed links has increased since the BT/Ofcom announcement of cease of all X.21, Kilostream copper circuits by March 20. This has made us redesign our connectivity to remote radio site with diverse connectivity many with 2 x fibre, other more challenging links with 1 x fibre and 1 x MW radio link.</p> <p>We have also looked to increase the BW and latency of all links and MW radio fulfils this requirement.</p>

<p>Question 6: How do you expect your usage to change over the next 5-10 years? Please provide information on:</p> <ul style="list-style-type: none"> - any increase/decrease in the number of links (by band) and bandwidth expected; - likely changes in geographic distribution of links; - likely changes in distribution of links by frequency band; - likely changes in capacity of links and how you expect to deliver this capacity; - other changes not covered above 	<p>Confidential? –N</p> <p>We will continue to develop our remote radio estate; this may increase our requirement for further links.</p> <p>We will not be changing our geo distribution of links in the coming future (at least 15 years).</p> <p>It is unlikely we will change the frequency of any of our already established links.</p> <p>There may be a requirement to change the capacity of an already licenced link in the future, if the requirement for the given site changes. This may contradict the frequency change answer above, but we would mostly try to change capacity within the already licenced parameters.</p>
<p>Question 7: Which of the developments listed above are expected to have the biggest impact on your use of fixed links? Are there other developments to be aware of that have not been listed?</p> <p>Please explain the reasons for your answer.</p>	<p>Confidential? –N</p> <p>Hybrid sharing of the U6 band could possibly have an impact to some of our operational links.</p> <p>Channel spacing overlaps, power reduction and separation distances.</p>
<p>Question 7a: Are you considering using NGSO satellites to provide backhaul for your network? If so, please provide details of the capacity requirements/expectations and the locations where delivery of this type of backhaul would be likely.</p>	<p>Confidential? –N</p> <p>Potentially this is a technology we could explore but we have a latency requirement of 40ms RTT so this would be a deciding factor if NGSO could meet this in the future.</p>
<p>Question 9: Which of the listed technologies are you already using or do you plan to use in the future? For each that you are using/plan to use, please explain:</p> <ul style="list-style-type: none"> - the current extent of your use, whether you expect to expand or shrink your use over the next 5-10 years, and how availability of these capabilities might impact your choice to deploy fixed links vs an alternative. <p>Estimates of numbers or percentage of links deployed with each capability now and in the future would be valuable. We are particularly interested in feedback on future use of BCA.</p>	<p>Confidential? –N</p> <p>Out of the technologies listed we only use Adaptive Code and Modulation (ACM) on all of our links (Except E band).</p> <p>Its unlikely we will be looking to develop our links to use the other technologies listed within the next 10 years.</p> <p>We are unlikely to use Band and Carrier Aggregation (BCA) with any of our existing links within the next 10 years. Our future use of this technology is possible but unlikely.</p>

<p>Question 9a: If you plan to use BCA would you plan to use this primarily for new links, upgrades to existing links or a mix? What factors affect your decision to deploy (or not deploy) BCA today?</p> <p>Please provide whatever detail you can</p>	<p>Confidential? –N</p> <p>As above</p>
<p>Question 10: Do you have a need for W and D bands for fixed links use (or alternative uses)? If so, in what timescale?</p> <p>Please provide further details, including any evidence you have to support your response.</p>	<p>Confidential? –N</p> <p>We have no future plans to use W and D bands.</p>
<p>Question 11: Do you expect to apply for new fixed links in the upper 6 GHz band in the future, and if so, in which geographical areas? What are the reasons for choosing this band over other available bands or alternative technologies? Is there a technical reason why you would choose the upper 6 GHz band?</p>	<p>We currently have 4 U6 bands in operational use. There is a possibility we may require more.</p> <p>Geo area for these are Scottish isles and highlands.</p> <p>The technical choice for this frequency band is mostly distance, crossing water and capacity based upon the 99.99% availability. Our first licence application would have been 7 or 7.5 band but downgraded to U6 because of licence availability.</p>
<p>Question 12: Are there other international developments that you are aware of that could affect availability and utility of fixed links in the next 5-10 years?</p>	<p>Confidential? –N</p> <p>No</p>

Please complete this form in full and return to fixedlinks.review@ofcom.org.uk.