

## Your response

Question	Your response
<p><b>Question 1:</b> 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 IT &amp; network deployment.</p>
<p><b>Question 2:</b> 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>Historically - cost effective network, but more recently as a backup or alternative route only.</p> <p>In the next 5 years we are likely to reduce fixed link usage because of its inability to compete with rented bandwidth costs. (licensing cost is an increasingly a large part of this due to higher bandwidths required for modern IT systems)</p>
<p><b>Question 3:</b> 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>No. L- band withdrawal means there is no longer a frequency band capable of circumnavigating slightly obstructed paths (due to minor foliage, trees etc).</p> <p>Spectrum has been sold to MNOs who appear to be getting increasingly more prime spectrum. £fs wins!</p>
<p><b>Question 4:</b> Is there anything about Ofcom's current framework for authorising fixed links which you consider could be improved?</p>	<p>Yes, frequency spectrum has become too expensive to compete with in ground / rented circuits. We are ceasing many links due to ongoing high license costs coupled with capex &amp; opex costs. e.g., 2 x 56MHz channels; (H &amp; V) at 38Ghz to provide approx. 622Mb/s = £3000 pa. 1000Mb/s MLL, Openreach et al cable 5kms £4k pa. no other opex.</p>
<p><b>Question 5:</b> How has your use of fixed links changed between 2016 and now? Please provide information on:</p> <ul style="list-style-type: none"> <li>- Reasons for increase or decrease in the number of your links since 2016;</li> <li>- 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.</li> </ul>	<p>Generally DECREASING due to increasing bandwidth demands from IT systems &amp; reduction of typical 1Gb/s circuit rental costs compared to overall cost of licensing &amp; maintaining fixed links. (see above comments).</p> <p>Requested wider channels &amp; used higher order modulation systems etc. where possible. Deployed some light or license free E band equipment for short links.</p> <p>Rented Gigabit fibre circuits.</p>

<p><b>Question 6:</b> 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"> <li>- any increase/decrease in the number of links (by band) and bandwidth expected;</li> <li>- likely changes in geographic distribution of links;</li> <li>- likely changes in distribution of links by frequency band;</li> <li>- likely changes in capacity of links and how you expect to deliver this capacity;</li> <li>- other changes not covered above</li> </ul>	<p>Confidential? - N</p> <p>Reduce usage of fixed links generally - UNLESS wider channel width license costs are reduced. License charge t Vs channel width is currently essentially linear.</p> <p>e.g. 14Mhz channel is £X pa. 56Mhz channel is £4X pa.</p> <p>Wide channels should be “discounted” more to address contemporary bandwidth requirements.</p> <p>“licensing costs are in place to regulate usage &amp; ensure efficient use of spectrum.”</p> <p>However: a 38Ghz channel is relatively expensive in a rural situation with little effective demand on spectrum vs a large spectrum resource. WHY?</p>
<p><b>Question 7:</b> 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>All</p>
<p><b>Question 7a:</b> Are you considering using NGSO satellites to provide backhaul for your network? If so, please provides 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>No</p>
<p><b>Question 8:</b> If you already use alternative transport options for delivering your services, please:</p> <ul style="list-style-type: none"> <li>- Provide an indication of the proportion of your services delivered over fixed links vs each alternative that you currently use. Is this proportion likely</li> </ul>	<p>Confidential? –N</p> <p>Microwave 40% in ground 60% (estimate) .</p> <p>Likely to reduce to 10% / 90% .</p>

<p>to change over the next 5-10 years? Is so please provide details;</p> <ul style="list-style-type: none"> <li>- Explain how your business rationale for use of fixed links vs alternative connectivity solutions is changing over time;</li> <li>- If possible, provide examples of your decision-making process for recently deployed connections</li> </ul>	<p>Fixed links require:</p> <ol style="list-style-type: none"> <li>1. License (Ofcom)</li> <li>2. Equipment Capex.</li> <li>3. Rental of third party sites often.</li> <li>4. Maintenance costs (Opex)</li> </ol>
<p><b>Question 9:</b> 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"> <li>- 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.</li> </ul> <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>NA</p>
<p><b>Question 9a:</b> 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? – Y / N</p> <p>BCA?</p>
<p><b>Question 10:</b> 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? – Y / N</p> <p>No</p>
<p><b>Question 11:</b> 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>Confidential? – Y / N</p> <p>No</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?

Confidential? – Y / N

No.

Please complete this form in full and return to [fixedlinks.review@ofcom.org.uk](mailto:fixedlinks.review@ofcom.org.uk).