

Your response

Question	Your response
<p>Question 1: (Section 3) Do you agree with our proposal for a single authorisation approach for new users to access the three shared access bands and that this will be coordinated by Ofcom and authorised through individual licensing on a per location, first come first served basis? Please give reasons supported by evidence for your views.</p>	<p>Confidential? – N</p> <p>We support the proposal of single authorization. The single authorization approach is easier to understand and apply for than several different ones. The awareness and possibility for individual licensing per location on LTE/5G bands is increasing in Europe. In the Netherlands, where it has been possible, it has been used widely. First come first served is easy to understand and compared to auctioning, the authorizations are likely to be based on actual demand, whereas auctions would likely attract investors in addition to actual spectrum users.</p>
<p>Question 2: (Section 3) Are there other potential uses in the three shared access bands that we have not identified?</p>	<p>Confidential? – N</p> <p>The identified potential uses in the consultation are: Private networks, Mobile coverage (rural), Mobile coverage (indoor), and Fixed Wireless Access. GSMA categorizes the spectrum bands to coverage bands (< 2 GHz) and to capacity bands (> 1 GHz). In addition to Mobile coverage (rural and indoors) the bands are likely to be used as Mobile capacity (rural and indoors).</p>
<p>Question 3: (Section 3) Do you have any other comments on our authorisation proposal for the three shared access bands?</p>	<p>Confidential? – N</p> <p>No.</p>
<p>Question 4: (Section 3) What is your view on the status of equipment availability that could support DSA and how should DSA be implemented?</p>	<p>Confidential? – N</p> <p>Generally, all mobile equipment can support DSA without any modification. If the DSA functionality has to be implemented in the devices, like in TVWS or CBRS without Domain Proxy by the regulation, the support has to be developed separately, and it delays the introduction of DSA and decreases attractiveness to use the band. If the technical details how the DSA control is implemented in the devices is not a part of the regulation, the DSA system can adapt to any wireless communication system and the existing devices can be used without modification.</p>

Question 5: (Section 4) Do you agree with our proposal for the low power and medium power licence? Please give reasons supported by evidence for your views.

Confidential? – N

The low power and medium power licenses are easy to understand and device based private LTE license pricing has been used e.g. in the Netherlands. A few issues could be considered: the mobile technology operates efficiently as single frequency network. Pricing per basestation decreases interest to build a better network by adding more basestations. Due to this practically all nation-wide mobile licenses are block licenses rather than device licenses. Another aspect is that although the collected fee is not based on market demand, like the auction price or Administrative Incentive Price, many frequency fees have a geographical price distribution. Just like the proposed licence fees in this consultation, the frequency fees are typically not market based. The advantage of the geographically distributed pricing is that it can differentiate spectrum users in high demand areas and it can encourage to investments in the low demand areas. We propose to use population density as a proxy to distribute license pricing geographically like it is done e.g. in the frequency fees in Finland, and to enhance that with an employment based proxy because a significant user group of the private LTE/5G licenses will be enterprises.

Question 6: (Section 4) Are there potential uses that may not be enabled by our proposals? Please give reasons supported by evidence for your views.

Confidential? – N

The proposed user groups in the consultation are: simple and cost-effective access to spectrum and a managed interference environment and extension of indoor mobile coverage or to deploy a private local network for enterprise. We think that these two groups represent only a subset of the identified users of the Section 3 in the consultation. A real-life reference to potential spectrum use of private LTE/5G licenses could be found from the private LTE license holders in the 3.7 GHz band in the Netherlands. An example of very likely spectrum users, which are not covered by either of the Section 4 group are the ports. Additionally, private LTE/5G has been available in very limited number of countries and typically just on one sub-band, it can expected that once the possibility for private LTE/5G becomes more common, also the ways to use those spectrum licenses will increase.

<p>Question 7: (Section 4) Do you agree with our proposal to limit the locations in which medium power licences are available? Please give reasons supported by evidence for your views.</p>	<p>Confidential? – N Clear geographic limits are easy to understand and regulate. We would suggest to keep an option open for medium power licenses in other areas of the UK. If not from the beginning, the option to open the medium power licensing to other areas could be possible later. The reason is in the answer of question 6. The potential uses of in section 4 are just a sub-section of the currently foreseen use. With the current geographical restrictions in the consultation, many industrial areas, ports and similar would not be able to apply for the medium power licenses.</p>
<p>Question 8: (Section 4) Do you have other comments on our proposed new licence for the three shared access bands?</p>	<p>Confidential? – N No.</p>
<p>Question 9: (Section 4) Do you agree that our standard approach to non-technical licence conditions is appropriate? Please give reasons supported by evidence for your views.</p>	<p>Confidential? – N Although the non-technical rules state that the licenses are non-exclusive, the regulator probably prefers to minimize issuing licenses which would cause harmful interference. A case that non-exclusive statement could be applied in practise could be that the first license holder does not use the spectrum. Five years’ notice time is a medium ground between yearly licenses and the 15+ year licenses of the mobile operators. We would propose to add one-year notice for adapting to DSA. We support the secondary market option as license transfer through spectrum trading as a non-technical license condition. In terms of geographical boundaries, we would propose to consider allowing off-shore use, like oil-rigs and possible marine vessels.</p>
<p>Question 10: (Section 4) Are you aware of any issues regarding numbering resources and Mobile Network Codes raised by our proposals which we have not considered here?</p>	<p>Confidential? – N No.</p>
<p>Question 11: (Section 5) Do you agree with the proposed technical licence conditions for the three shared access bands? Please give reasons supported by evidence for your views.</p>	<p>Confidential? – N We agree.</p>
<p>Question 12: (Section 5) Are there other uses that these bands could enable which could not be facilitated by the proposed technical licence conditions? Please give reasons supported by evidence for your views.</p>	<p>Confidential? – N We expect the technical license conditions to facilitate the foreseen spectrum use.</p>

<p>Question 13: (Section 5) Do you agree with our proposed coordination parameters and methodology? Please give reasons supported by evidence for your views.</p>	<p>Confidential? – N We agree.</p>
<p>Question 14: (Section 5) What is your view on the potential use of equipment with adaptive antenna technology (AAS) in the 3.8-4.2 GHz band? What additional considerations would we need to take into account in the technical conditions and coordination methodology to support this technology and to ensure that incumbent users remain protected?</p>	<p>Confidential? – N Use of adaptive antenna technology in the 3.8-4.2 GHz band is very likely. The adaptive antennas could be considered as a victim of interference and as a source of interference. As long as the adaptive antenna in the basestation is not used to connect just fixed terminals, there is no significant difference to protecting a non-adaptive antenna, because the mobile equipment can be located anywhere within the antenna pattern. As source of interference, a single beam of the adaptive antenna should remain within the emission limits of the regulation.</p>
<p>Question 15: (Section 5) Do you agree with our proposal not to assign spectrum to new users in the 3800-3805 MHz band and the 4195-4200 MHz band?</p>	<p>Confidential? – N We agree.</p>
<p>Question 16: (Section 6) Do you agree with our fee proposal for the new shared access licence? Please give reasons supported by evidence for your views.</p>	<p>Confidential? – N See our response to question number 5.</p>
<p>Question 17: (Section 7) Do you agree with our proposal to change the approach to authorising existing CSA licensees in the 1800 MHz shared spectrum? Please give reasons supported by evidence for your views.</p>	<p>Confidential? – N We agree.</p>
<p>Question 18: (Section 8) Do you agree with our proposal for the Local Access licence? Please give reasons supported by evidence for your views.</p>	<p>Confidential? – N We agree.</p>
<p>Question 19: (Section 8) Do you have any other comments on our proposal?</p>	<p>Confidential? – N Fairspectrum would be happy to participate in the DSA development.</p>
<p>Question 20: (Section 8) What information should Ofcom consider providing for potential applicants in the future and why would this be of use?</p>	<p>Confidential? – N The band specific coverage maps and the names of the respective license holders would help local use. Feedback from the discussions with the license holders, especially in the case of denied request would be useful.</p>
<p>Question 21: (Section 8) Do you agree with our proposal to have a defined licence period and</p>	<p>Confidential? – N</p>

<p>do you have any comments on the proposed licence term of three years?</p>	<p>It is good to define the license period. We think that the proposed 3 years is a good proposal.</p>
<p>Question 22: (Section 8) Do you have any other comments on the proposed Local Access licence terms and conditions?</p>	<p>Confidential? – N We note that there is no obvious benefit for license holders to allow Local Access and there is no obvious drawback not to allow Local Access.</p>
<p>Question 23: (Section 8) Do you agree with our fee proposal for the new local access licence? Please give reasons supported by evidence for your views.</p>	<p>Confidential? – N We agree.</p>