

Your response

Executive Summary

Neutral Wireless is an SME which seeks to use new technologies and business models to bring better coverage to people, particularly in areas where the regular market players have not been able to justify business cases. We are strong believers in the use of shared and dynamic spectrum access (DSA) as routes to gain access to spectrum, and welcome this consultation from Ofcom, which has highlighted that access to spectrum is a key barrier for new market entrants. Standards-compliant LTE using Dynamic Spectrum Access (DSA) has been deployed for demonstration via the 5G RuralFirst DCMS project, and this technology is ready for use today.

We fully support the opening up of existing Wireless Telegraphy Act spectrum (i.e. mobile spectrum), on a per-location shared basis, and in particular the recognition that new market entrants using sharing would require a period of certainty with the grant of a sharing-based license. Neutral Wireless strongly feel that the proposed 3 years of access for a “Shared Spectrum – Local Licence” is sufficient to make use of this spectrum economically viable in the manner intended by Ofcom. Sharing of spectrum, either by local license, or DSA, makes it possible to deliver connectivity to communities currently unserved by mobile network operators, after 4 previous rounds of spectrum auctions.

The requirement to give notification to consumers of the time-limited nature of spectrum used to provide a service is something we agree with in principle, but believe that the way this is done should be carefully managed – this requirement may put new market entrants at a disadvantage compared to incumbents, and prevent the full potential of this spectrum from being achieved.

We do highlight two extra considerations however, which Ofcom should keep in mind with these proposals – firstly, that there are occasions where gaining short-term (i.e. for periods far less than a year) access to unused spectrum presents an opportunity to deliver connectivity to rural and unconnected areas on a seasonal basis. Being able to handle this through a sharing-based approach would prevent short-term users from holding licenses (thus blocking other users from accessing) for the remainder of the year.

Secondly, the proposals presented appear to be designed for increments of 10 MHz of spectrum, without provision for lower carrier widths. NB-IoT in standalone mode can operate within 2x200 kHz channels of FDD spectrum, for example, and Ofcom should ensure that these proposals do not hinder such uses of smaller quantities of spectrum where they would deliver the coverage and performance required.

Responses to Consultation Questions

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 welcome this proposal, although are concerned about the potential for this process to be more time-consuming and lengthier than it need be. The current auction process for mobile spectrum has not delivered connectivity to a significant portion of UK land-mass, and many households are left without access to both high speed broadband and fast mobile internet access.</p> <p>Neutral Wireless feels it is critical that local licenses issued on a first-come-first-served basis must be properly enforced to ensure they are utilised meaningfully (and beyond merely transmitting an empty carrier on the spectrum) – while there is a clear commercial need to gain access to the spectrum in advance of deploying equipment, holders of local shared access band licenses should be making efficient use of that spectrum and delivering a service. We recognise that Ofcom’s proposal covers this, but would question whether this can feasibly be policed/enforced at present in a scalable way. This is an area of work which we have experience with, and would be willing to assist Ofcom with.</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>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>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>The DCMS-funded 5G RuralFirst project has demonstrated the use of DSA in a real deployment, working with existing commercially-available LTE handsets, using macro-cell base stations, operating within the LTE specifications.</p> <p>We would strongly support a more rapid roll-out of a DSA-based approach as it would be</p>

	<p>cheaper than the proposed manual licensing regime, and is already tried-and-tested technology both in the UK (TV WhiteSpace) and abroad (CBRS in the USA, for example).</p> <p>Neutral Wireless would highlight out that one of the key limitations of TV WhiteSpace has been around rules for TVWS user equipment and database querying requirements. It is already possible to control the transmit power of user equipment via an LTE base station, and suggest that Ofcom should carefully consider the capabilities of today's mobile devices and equipment when designing DSA rules – if DSA can be supported in handsets available today, it will be more impactful and help Ofcom to better deliver on the DCMS statement of strategic priorities, than to wait for new equipment to become available through the market.</p>
<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.</p>	<p>Confidential? – N</p>
<p>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.</p>	<p>Confidential? – N</p> <p>We believe that Ofcom's current structure for the issuance of local licenses for the shared access bands may neglect the potential for deployment of NB-IoT technology in standalone mode, using a 200 kHz wide carrier. Therefore, allocating spectrum in 10 MHz blocks may be too restrictive for low-bandwidth IoT use-cases that can be highly impactful and beneficial to industry. (See 5G RuralFirst and IoT connectivity to farming, agriculture and infrastructure/buildings)</p> <p>While today's business models for macro-cell installations do not allow for dedicated NB-IoT deployments, this is something which Neutral Wireless has the ability to work around.</p>
<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</p> <p>Yes, we feel it is reasonable to limit local medium power licences to rural areas.</p>

Question 8: (Section 4) Do you have other comments on our proposed new licence for the three shared access bands?	Confidential? – N
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.	Confidential? – N
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?	Confidential? – N
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.	Confidential? – N
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.	Confidential? – N
Question 13: (Section 5) Do you agree with our proposed coordination parameters and methodology? Please give reasons supported by evidence for your views.	Confidential? – N
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?	Confidential? – N
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?	Confidential? – N
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.	Confidential? – N
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.	Confidential? – N

<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</p> <p>We strongly support these proposals, but would highlight the importance of how objections would be handled, and how to ensure that MNOs do not provide “reasonable” objections to every request on the grounds of a forward-looking plan to deploy, which does not then materialise.</p>
<p>Question 19: (Section 8) Do you have any other comments on our proposal?</p>	<p>Confidential? – N</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</p> <p>In addition, we would emphasise the importance of access to accurate and up-to-date coverage information and spectrum utilisation information on a localised basis, in order to facilitate the development of viable business models utilising local access licenses.</p>
<p>Question 21: (Section 8) Do you agree with our proposal to have a defined licence period and do you have any comments on the proposed licence term of three years?</p>	<p>Confidential? – N</p> <p>We agree with the granting of licenses for a 3-year period and are confident this offers sufficient time for our business model to facilitate effective usage of spectrum on this timescale.</p> <p>We do suggest that shorter-term licenses should also be made available to permit responsible usage of spectrum, and ensure that Ofcom is able to re-use spectrum after a short-term localised event.</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</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</p> <p>A cost-based approach appears fair, although we feel that Ofcom should explore more automated approaches, which may include DSA, in order to progress shared spectrum access more rapidly, and reduce the cost barrier to deployments. While we recognise that significantly reduced license costs are a huge step forwards, since these costs are</p>

simply to recover operational costs within Ofcom, anything to improve the efficiency of license delivery (be that cost, time-to-license, or similar) should be considered.