

## Consultation response form

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

Siew Yoon Tan

Ofcom  
Riverside House  
2A Southwark Bridge Road  
London SE1 9HA

<b>Consultation title</b>	Enabling opportunities for innovation
<b>Full name</b>	Paul Nikolich, Chair of IEEE 802
<b>Contact phone number</b>	+1 509-891-3281
<b>Representing (delete as appropriate)</b>	Organisation
<b>Organisation name</b>	IEEE 802 LAN/MAN Standards Committee
<b>Email address</b>	IEEE802radioreg@ieee.org

## Confidentiality

We ask for your contact details along with your response so that we can engage with you on this consultation. For further information about how Ofcom handles your personal information and your corresponding rights, see [Ofcom's General Privacy Statement](#).

<b>Your details: We will keep your contact number and email address confidential. Is there anything else you want to keep confidential? Delete as appropriate.</b>	Nothing
<b>Your response: Please indicate how much of your response you want to keep confidential. Delete as appropriate.</b>	None
<b>For confidential responses, can Ofcom publish a reference to the contents of your response?</b>	Yes

## Your response

Question	Your response
<p><b>Question 1:</b> (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 No comment.</p> <p>No comment.</p>
<p><b>Question 2:</b> (Section 3) Are there other potential uses in the three shared access bands that we have not identified?</p>	<p>Confidential? – N No comment.</p>
<p><b>Question 3:</b> (Section 3) Do you have any other comments on our authorisation proposal for the three shared access bands?</p>	<p>Confidential? – N No comment.</p>
<p><b>Question 4:</b> (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 No comment.</p>
<p><b>Question 5:</b> (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 No comment.</p>
<p><b>Question 6:</b> (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 No comment.</p>
<p><b>Question 7:</b> (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 No comment.</p>
<p><b>Question 8:</b> (Section 4) Do you have other comments on our proposed new licence for the three shared access bands?</p>	<p>Confidential? – N No comment.</p>
<p><b>Question 9:</b> (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 No comment.</p>
<p><b>Question 10:</b> (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 comment.</p>
<p><b>Question 11:</b> (Section 5) Do you agree with the proposed technical licence conditions for the</p>	<p>Confidential? – N No comment.</p>

three shared access bands? Please give reasons supported by evidence for your views.	
<b>Question 12:</b> (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 No comment.
<b>Question 13:</b> (Section 5) Do you agree with our proposed coordination parameters and methodology? Please give reasons supported by evidence for your views.	Confidential? – N No comment.
<b>Question 14:</b> (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 No comment.
<b>Question 15:</b> (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 No comment.
<b>Question 16:</b> (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 No comment.
<b>Question 17:</b> (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 No comment.
<b>Question 18:</b> (Section 8) Do you agree with our proposal for the Local Access licence? Please give reasons supported by evidence for your views.	Confidential? – N No comment.
<b>Question 19:</b> (Section 8) Do you have any other comments on our proposal?	Confidential? – N We propose that Ofcom should defer its plan to open 2390-2400 MHz to mobile use, pending further study. The previous interference risk assessment described in Annex 6 of the consultation was conducted using Wi-Fi technology that does not implement the next generation standard, IEEE P802.11ax. While that standard is currently being completed in IEEE 802, pre-standard products are already in the field.

	<p>IEEE P802.11ax is the next generation of the IEEE 802.11 standard and is far more sophisticated than IEEE 802.11n-vintage equipment used in the analysis and the follow-up 802.11ac-era equipment. IEEE P802.11ax offers multi-user MIMO antenna technology, improved efficiency, increased range, and enhanced user experience. Conclusions about the impact of adjacent operations have not accounted for the new IEEE P802.11ax functionality operation adjacent to the proposed 2390-2400 MHz band.</p> <p>In addition, any version of IEEE 802.11 equipment operating on Channel 1, directly adjacent to the 2390-2400 MHz proposed band, will be affected by anything over -62 dBm per 20 MHz. As mentioned in section 5 of the consultation, a 24 dBm base station was operating in the 2390-2400 MHz band is likely to cause notable degradation of IEEE 802.11 operations on Channel 1 up to 3 meters away, which is more than the 1 meter distance suggested in the consultation (A6.11). With IEEE 802.11 equipment being installed and used in so many varied places, it is a real possibility that base stations as proposed in the consultation could be near IEEE 802.11 devices, especially in indoor applications.</p> <p>Beyond IEEE 802.11 standards, IEEE 802.15.4, e.g., Wi-Sun and Zigbee, are not even mentioned in the consultation. They should be considered and analysed before action is taken. For example, following the National Infrastructure rollout plan, in excess of 100 million devices will be operating on ZigBee technology across the entire UK territory in urban and rural areas beyond 2020, including smart meters, gateways and consumer access devices. Furthermore, even though Bluetooth is mentioned as a user of the 2400 MHz band, no real analysis was done on the issue, and Bluetooth community on this proposal should be sought.</p> <p>Considering concerns brought out above, we question why the 10 MHz from 2390 to 2400 MHz is part of this proposal. Opening up this 10 MHz should be deferred pending further analysis on effects to the operations above 2400 MHz or be removed from the proposal entirely.</p>
<p><b>Question 20:</b> (Section 8) What information should Ofcom consider providing for potential</p>	<p>Confidential? – N No comment.</p>

applicants in the future and why would this be of use?	
<b>Question 21:</b> (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?	Confidential? – N No comment.
<b>Question 22:</b> (Section 8) Do you have any other comments on the proposed Local Access licence terms and conditions?	Confidential? – N No comment.
<b>Question 23:</b> (Section 8) Do you agree with our fee proposal for the new local access licence? Please give reasons supported by evidence for your views.	Confidential? – N No comment.

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