

**Consultation response form**

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

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| **Consultation title** | Enabling opportunities for innovation |
| **Full name** | Paul Nikolich, Chair of IEEE 802 |
| **Contact phone number** | +1 509-891-3281 |
| **Representing (delete as appropriate)** | Organisation |
| **Organisation name** | IEEE 802 LAN/MAN Standards Committee |
| **Email address** | 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](http://www.ofcom.org.uk/about-ofcom/foi-dp/general-privacy-statement).

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

**Your response**

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| **Question** | **Your response** |
| **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. | Confidential? – N  No comment.  No comment. |
| **Question 2:** (Section 3) Are there other potential uses in the three shared access bands that we have not identified? | Confidential? – N  No comment. |
| **Question 3:** (Section 3) Do you have any other comments on our authorisation proposal for the three shared access bands? | Confidential? – N  No comment. |
| **Question 4:** (Section 3) What is your view on the status of equipment availability that could support DSA and how should DSA be implemented? | Confidential? – N  No comment. |
| **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  No comment. |
| **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  No comment. |
| **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. | Confidential? – N  No comment. |
| **Question 8:** (Section 4) Do you have other comments on our proposed new licence for the three shared access bands? | Confidential? – N  No comment. |
| **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  No comment. |
| **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  No comment. |
| **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  No comment. |
| **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  No comment. |
| **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  No comment. |
| **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  No comment. |
| **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  No comment. |
| **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  No comment. |
| **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  No comment. |
| **Question 18:** (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. |
| **Question 19:** (Section 8)Do you have any other comments on our proposal? | Confidential? – N  We request that Ofcom should put its plan to open 2390-2400 MHz to mobile use on hold, pending further study. A primary reason is the previous interference risk assessment described in Annex 6 of the consultation was conducted using Wi-Fi technology that does not include the next generation standard that is currently being developed in IEEE 802, IEEE P802.11ax. In fact there are pre-standard products already in the field.  IEEE P802.11ax is the next generation to the IEEE 802.11 standard going beyond what IEEE 802.11n standard and equipment that was used in the analysis. What IEEE P802.11ax has that goes beyond the previous standards, improvements and use of Multi-user MIMO antenna technology, more efficient in air time, will have increased range and enhanced user experience. Conclusions about the impact of adjacent operations have not included what affects might occur to IEEE P802.11ax being adjacent to the proposed 2390-2400 MHZ band, and what those effects might be.  In addition to that, IEEE 802.11 operating on Channel 1 directly adjacent to the 2390-2400 MHz proposed band will be affected by anything above -62 dBm per 20 MHz. As mentioned in section 5 of the consultation, the technical proposal, that if a 24 dBm base station operating in the 2390-2400 MHz band, there is likely to be notable degradation of IEEE 802.11 operations on Channel 1 for up to 3 meters away, which is more than the 1 meter away per the consultation. With IEEE 802.11 equipment being installed and used in so many varied places, it is a real possibility that a base station proposed in the consultation could be near an IEEE 802.11 device, especially in any indoor application.  Beyond the focus above on IEEE 802.11 standards, there is also IEEE 802.15.4g and Zigbee in the adjacent band that 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. Along with that, even though Bluetooth is mentioned as a user of the 2400 MHz band, no real analysis was done and if the Bluetooth community has any feedback on this proposal.  Considering concerns brought out above, why is this 10 MHz from 2390 to 2400 MHz part of this proposal? Opening up this 10 MHz should at minimum be put on hold pending further analysis on effects to the operations above 2400 MHz or be removed from the proposal totally. |
| **Question 20:** (Section 8)What information should Ofcom consider providing for potential applicants in the future and why would this be of use? | Confidential? – N  No comment. |
| **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? | Confidential? – N  No comment. |
| **Question 22:** (Section 8)Do you have any other comments on the proposed Local Access licence terms and conditions? | Confidential? – N  No comment. |
| **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. | Confidential? – N  No comment. |

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