

## Your response

Question	Your response
<b>Question 1: Do you agree with the prioritisation of the agenda items, as shown in Annex 5, and if not why?</b>	<p>Confidential? – N</p> <p>By and large Microsoft agrees with Ofcom's prioritization of the WRC-19 agenda items as shown in Annex 5. The two exceptions are the two agenda items related to RLAN use – AI 1.16 and AI 9.1.5. We believe that Ofcom should place each in the high priority category for the UK at WRC-19 given the evidence of increasing demand for Wi-Fi, the role of spectrum in addressing this demand, and that these two agenda items can seriously limit the availability and utility of Wi-Fi spectrum.</p>

**Question 2: Ofcom is supporting the following three priority bands for IMT identification in the RRs:**

**24.25 – 27.5 GHz**

**40.5-43.5 GHz (as part of a wider global 37-43.5 GHz tuning range)**

**66 – 71 GHz**

**If you don't agree with any of these bands, or think we should be promoting other bands, please provide justification for your views.**

Confidential? – N

Microsoft agrees with Ofcom's prioritization of the 24.25-27.5 GHz and 40.5-43.5 GHz (as part of a wider global 37-43.5 GHz tuning range) for IMT-2020 identification. Microsoft strongly disagrees with Ofcom prioritizing the 66-71 GHz band for IMT 2020 identification.

The UK has decided to make the 57-71 GHz frequency range license-exempt. Our understanding is that under Ofcom's regulations any technology could gain access to this spectrum provided it meets the conditions spelled out in the regulations. Ofcom's intent is for the band to be technology neutral.

IMT-2020 refers to a specific technology standard and is thus not technology neutral. Further, Microsoft does not believe IMT-2020 identification for the 66-71 GHz frequency range is required for 5G success. Currently, there is a mobile allocation for 57-71 GHz in all three ITU regions. A mobile allocation is enough to enable IMT and non-IMT technologies to develop on an equal basis-technology neutral. Experience has shown that a mobile allocation is enough to enable IMT and non-IMT technologies to develop on an equal basis.

Technology neutral use of 66-71 GHz, where IMT and non-IMT technologies can develop on an equal basis requires the band not be identified for IMT-2020 at WRC-19. The hard border created by an IMT-2020 identification for the 66-71 GHz band will fragment the overall 57-71 frequency range, with non-IMT technologies such as IEEE 802.11-2016 (and successor standards) limited to the 57-66 GHz range, while IMT-2020 can operate across the entire band. It runs counter to the very idea of technology neutrality Ofcom seeks to promote.

<p><b>Question 3: What are your views on the suitability of the currently identified bands for HAPs and do you think there is a requirement for additional spectrum? Recognising that we support 26 GHz as a global band for IMT under agenda item 1.13, what are your views on the bands currently under study for HAPs, both globally and in ITU-R Regions?</b></p>	<p>Confidential? – N</p> <p>N/A</p>
<p><b>Question 4: What are your views on the bands within scope of Agenda Item 1.16 and their suitability for Wi-Fi and Wi-Fi like services? Do you agree that Ofcom should support the CEPT position of No Change? If not, please provide evidence to support your view.</b></p>	<p>Confidential? – N</p> <p>Microsoft disagrees that Ofcom should support the CEPT position of No Change (NOC) for all frequency bands covered within Agenda Items 1.16.</p> <p>Microsoft believes that the 5725-5850 MHz frequency band should be made available for WAS/ RLAN use in all three Regions. This requires WRC-19 to agree to a mobile service allocation for WAS/RLAN use in Region 1. Additionally, Microsoft believes that the compatibility studies performed in ITU-R WP5A demonstrate that outdoor RLAN operations should be permitted in 5150-5250 MHz frequency range.</p> <p>Microsoft does agree with Ofcom’s assessment that in the current study period there has not been any new supporting technical compatibility arguments to justify opening the 5350-5470 MHz band for RLAN use. We also agree with Ofcom’s recommendation of NOC for 5250-5350 MHz and 5850-5925 MHz.</p>

<p><b>Question 5: Do you agree that UK support the inclusion of the updated Recommendation M.1849-1 (“Technical and operational aspects of ground-based meteorological radars”) in footnote No.5450A? What are your views on the requirement to include a reference to ITU-R Recommendation ITU R M.1638 1 in footnotes No.5447A and 5.450A and the potential impact upon Wi-Fi (and similar technologies)?</b></p>	<p>Confidential? – N</p> <p>Microsoft disagrees with Ofcom’s recommendation that the UK support the inclusion of the updated ITU-R Recommendation M.1849-1 in footnote No. 5450A and its recommendation that the UK support the inclusion of a reference to ITU-R Recommendation M.1638-1 in footnotes No. 5447A and 5.450A due to the harmful effect these actions will have on RLAN usage in the DFS bands, which represents a significant percentage of Wi-Fi spectrum in the 5 GHz band.</p> <p>RESOLUTION 764 (WRC-15) was clear that incorporation by reference of either report into the respective footnotes could not impose “undue constraints” on RLAN services referenced in these footnotes. As some of the new radars incorporated by reference are designed not to be detected, then only certain mitigation approach will be to discontinue RLAN use in the DFS bands – which seems like the definition of an undue constraint on RLAN operations.</p>
<p><b>Question 6: Do you agree that UK support a position of not making changes to the Radio Regulations to reference specific bands for M2M/IoT usage?</b></p>	<p>Confidential? – N</p> <p>Microsoft agrees with Ofcom’s proposed position for the UK.</p>
<p><b>Question 7: What are your views on the potential removal of the limitations listed above?</b></p>	<p>Confidential? – N</p> <p>N/A</p>
<p><b>Question 8: What are your views on the approach we are proposing to take in respect of ESIMs and are there any additional factors that you think we should take into account?</b></p>	<p>Confidential? – N</p> <p>N/A</p>

<p><b>Question 9: What are your views on the establishment of regulatory provisions, in Article 22, that cover non-GSO operation between 37.5 and 51.4 GHz?</b></p>	<p>Confidential? – N</p> <p>N/A</p>
<p><b>Question 10: What are your views on the various issues under consideration under Agenda Item 7, particularly in respect of the bringing into use of non-geostationary satellite networks (i.e. Issue A)?</b></p>	<p>Confidential? – N</p> <p>N/A</p>
<p><b>Question 11: What are your views on Agenda Item 9.1.1?</b></p>	<p>Confidential? – N</p> <p>N/A</p>
<p><b>Question 12: What are your views on the potential establishment of satellite pfd limits, in the 1 452 – 1 492 MHz band, to protect terrestrial use?</b></p>	<p>Confidential? – N</p> <p>N/A</p>
<p><b>Question 13: Do you have any views on the bands being studied and are there any other considerations which you think should be taken into account? What are your views on the appropriateness of the current emission limits in the band 3 700 – 4 200 MHz?</b></p>	<p>Confidential? – N</p> <p>N/A</p>

<p><b>Question 14: Do you agree that no changes to the RRs are required, under Agenda Item 9.1.7, and that managing the unauthorised operation of earth station terminals (deployed within its territory) should be addressed by the national administration concerned?</b></p>	<p>Confidential? – N</p> <p>N/A</p>
<p><b>Question 15: What are your views on the need for additional fixed satellite service allocations in the band 51.4 – 52.4 GHz?</b></p>	<p>Confidential? – N</p> <p>N/A</p>
<p><b>Question 16: What are your views on Agenda Item 1.8, particularly the need to enhance maritime safety, set against the need to respect the international spectrum allocations and the protection of passive services in adjacent bands?</b></p>	<p>Confidential? – N</p> <p>N/A</p>
<p><b>Question 17: What are your views on Agenda Item 1.9.1, particularly the need to respect the current integrity of the AIS?</b></p>	<p>Confidential? – N</p> <p>N/A</p>
<p><b>Question 18: What are your views on Agenda Item 1.9.2, particularly the need to take into account current national users in the bands defined by RR Appendix 18?</b></p>	<p>Confidential? – N</p> <p>N/A</p>

<p><b>Question 19: What are your views on Agenda Item 1.10 and do you think that any changes to the Radio Regulations may be necessary?</b></p>	<p>Confidential? – N</p> <p>N/A</p>
<p><b>Question 20: What are you views on Agenda Item 1.11, and do you agree that no specific identification for rail communications is required in the Radio Regulations?</b></p>	<p>Confidential? – N</p> <p>Microsoft agrees that there should be no specific identification for rail communication is required in the Radio Regulations.</p>
<p><b>Question 21: What are you views on Agenda Item 1.12 and do you agree that there is no requirement for specific identification to ITS in the Radio Regulations?</b></p>	<p>Confidential? – N</p> <p>Microsoft agrees that there is no requirement for specific identification to ITS in the Radio Regulations</p>
<p><b>Question 22: What are you views on Agenda Item 9.1.4 concerning radiocommunications for sub-orbital vehicles?</b></p>	<p>Confidential? – N</p> <p>N/A</p>

<b>Question 23: What are your views on Agenda Item 1.1, recognising that licensed amateur operators in the UK already have access to parts of the 50 – 54 MHz band?</b>	Confidential? – N  N/A
<b>Question 24: What are your views on Agenda Item 1.2 concerning power limits for MetSat, Mobile Satellite and EESS, and the linkage to agenda item 1.7?</b>	Confidential? – N  N/A
<b>Question 25: What are your views on Agenda Item 1.3, particularly on any limits required to protect terrestrial use?</b>	Confidential? – N  N/A
<b>Question 26: What are your views on Agenda Item 1.7 considering spectrum needs for short duration satellites, noting also the potential linkages to Agenda Item 1.2?</b>	Confidential? – N  N/A
<b>Question 27: What are your views on Agenda Item 1.15, particularly on the protection needs of passive services?</b>	Confidential? – N  N/A



<p><b>Question 28: What are your views on Agenda Item 9.1.6, particularly on the categorisation of WPT and whether WRC action is required?</b></p>	<p>Confidential? – N</p> <p>N/A</p>
<p><b>Question 29: Do you have any comments concerning the Standing Agenda Items, where not covered elsewhere in this document?</b></p>	<p>Confidential? – N</p> <p>No</p>
<p><b>Question 30: Are you aware of any specific issues, not covered elsewhere in this document, which are likely to be raised in this part of the Director’s Report and of which you think Ofcom should be aware?</b></p>	<p>Confidential? – N</p> <p>No</p>
<p><b>Question 31: Do you have any comments on Agenda Item 9.3 considering Resolution 80?</b></p>	<p>Confidential? – N</p> <p>N/A</p>
<p><b>Question 32: What changes to the Radio Regulations have you identified that would benefit from action at a WRC and why? Do you have any proposals regarding UK positions for future WRC agenda items or suggestions for other agenda items, needing changes to the Radio Regulations, that you would wish to see addressed by a future WRC?</b></p>	<p>Confidential? – N</p> <p>N/A</p>

