

Your response

Question	Your response
<p>Question 1: Do you agree with the prioritisation of the agenda items, as shown in Annex 5, and if not why?</p>	<p>Confidential? –N</p> <p>Wi-Fi Alliance commends Ofcom on its ongoing work in the area of spectrum planning. This <i>Consultation</i> will inform and support the UK’s preparations for WRC-23.</p> <p>Wi-Fi Alliance agrees with Ofcom’s designation of the WRC-23 Agenda Item 1.2 (6425-7025 MHz & 7025-7125 MHz) as “HIGH” priority. Ever increasing wireless data traffic volumes combined with expanding performance requirements and a growing number of devices continue to drive Wi-Fi spectrum needs. Wi-Fi Alliance enthusiastically welcomed the Ofcom’s decision that partially mitigated Wi-Fi spectrum shortfall by allowing Wi-Fi operations in the 5 925-6 425 MHz band (lower 6 GHz band), but access to the remaining portion of the 6 GHz (i.e., 6 425-7 125 MHz band (i.e., upper 6 GHz band)) is urgently needed to meet higher data throughput, lower latency and other requirements. And, importantly, there are no alternative frequency bands that can accommodate expanding Wi-Fi spectrum needs, now or in the future.</p> <p>An IMT identification in the 6425-7125 MHz band at WRC-23 would create significant and persistent regulatory uncertainty that would impair introduction of current and future Wi-Fi generations in the UK and worldwide. Wi-Fi Alliance, therefore, respectfully asks Ofcom, as a matter of high priority, to oppose IMT identification in the 6 425-7 125 MHz band at WRC-23.</p>
<p>Question 2: What are your views on the continued need to protect global aeronautical and maritime services, in the 4.8 – 4.99 GHz band, under this agenda item?</p>	<p>No response</p>
<p>Question 3a: Do you agree that the UK interest in the bands 3 600-3 800 MHz and 3 300-3 400 MHz in Region 2 (North & South</p>	<p>No response</p>

<p>Americas) should be limited to any impacts on UK operational use in those areas?</p>	
<p>Question 3b: Do you agree that the UK should maintain its objections to changes to the regulatory environment for the band 3300-3400 MHz (in Region 1, Europe, Africa, Middle East), noting UK has interests in use of radar for both ground and airborne operations?</p>	<p>No response</p>
<p>Question 3c: What is your view on the use of 6425-7025 & 7025-7125 MHz, and what evidence do you have to support this view? How does that inform your views on a IMT identification in these bands?</p>	<p>Confidential? – Y / N</p> <p>In considering policy and position on the subject, Wi-Fi Alliance respectfully asks Ofcom to consider the following points:</p> <p>Point #1: The 6 GHz Wi-Fi is becoming increasingly important in connecting people and devices in the UK and worldwide, but spectrum shortfall undermines its viability and benefits</p> <p>Wi-Fi Alliance congratulates Ofcom on being the first European regulator to expand Wi-Fi operations in the 6 GHz band. In adopting this decision, Ofcom judiciously recognized that, over the last two decades, Wi-Fi has evolved from a nascent technology to a critical component of the UK’s wireless infrastructure. Unfortunately, this extraordinary transformation has not been met by a corresponding increase in access to spectrum capacity. Even the 500 MHz (5925-6425 MHz) increase, while significant and much needed, does not offer sufficient bandwidth to support the ever-increasing demand for Wi-Fi connectivity. Notably, Ofcom’s own projections indicate that Wi-Fi “demand could grow between six and ten times over ten years” (see Ofcom Improving Spectrum Access for Wi-Fi, July 2020, at paragraph 3.24). As Ofcom noted in the report, Wi-Fi has become increasingly important in connecting people and devices everywhere and that 6 GHz spectrum is critical for futureproofing of Wi-Fi connectivity.</p> <p>That is why countries around the globe are expanding Wi-Fi access to the entire 5925-7125 MHz band (e.g., Brazil, Canada, Chile, Japan, Saudi Arabia, South Korea, US) (see <i>Consultation</i>, paragraph 4.2.8). The advantages of a harmonized Wi-Fi across the 6 GHz band include commonality of equipment, economies of scale, larger markets, increased competition, lower product prices, and a</p>

wider choice of products, to name just a few. As other countries proceed to authorize Wi-Fi deployments in the 6425-7125 MHz band, timely action facilitating similar regulatory framework is imperative to enabling wireless connectivity in the UK. Conversely, lack of spectrum access to the upper-6 GHz band and persistent regulatory uncertainty may impair current and future Wi-Fi generations.

Point #2: Sharing studies confirm that International Mobile Telecommunications (IMT) networks cannot coexist with incumbent services in the 6425-7125 MHz frequency band

Importantly, extensive studies demonstrated that Wi-Fi can operate in the 6425-7125 MHz band on non-exclusive, non-interference and unprotected basis without disrupting incumbent services under similar regulatory conditions that were already adopted by Ofcom in the 5925-6425 MHz band. These conditions are acceptable for license-exempt RLAN networks but are not feasible for *commercially viable*, licensed 5G/IMT deployments. To maintain the necessary quality of service, 5G/IMT wide-area networks require priority access to spectrum. Hence, these (licensed 5G/IMT) networks cannot avoid interfering with or tolerate interference from the incumbent operations in the 6425-7125 MHz band. The 5G/IMT coexistence with fixed service deployments in the 6425-7125 MHz band has not been addressed even though this spectrum is extensively utilized by long distance and high-capacity fixed links in the UK. Similarly, 5G/IMT networks coexistence with the incumbent satellite services is not ensured. It is, therefore, unrealistic to expect that 5G/IMT networks can coexist with important ongoing operations in the 6425-7125 MHz band as noted in the *Consultation* (see paragraph 4.2.9). And relocation of incumbents to another frequency band, even if an alternative frequency band is made available, may not be feasible and would require extensive expenditures and transition periods (i.e., years).

Point #3 – IMT identification in the 6425-7125 MHz frequency band will not enable commercially viable 5G deployments

Even if the WRC-23 were to identify the 6425-7125 MHz band for IMT in some countries, significant time (i.e., years) and investments (i.e., billions of pounds) would be required to develop, implement, deploy and operate 5G/IMT networks in the upper-6 GHz band. It is unlikely that such 5G/IMT networks would be commercially viable, given their limited market scale and harmonization. Proposed “macro-base station” or other quasi-IMT implementations simply lack the economies of scope and scale necessary for a robust equipment ecosystem or commercial viability. In short,

additional 6 GHz spectrum will not address the underlying problems of 5G network in the UK or elsewhere.

Point #4 No valid justification for IMT identification in the 6425—7125 MHz

Wi-Fi Alliance respectfully asks Ofcom to recognize that the IMT proponents' assertions on the need for identification in yet another frequency band (i.e., 6425-7125 MHz) are unfounded. This is clearly evidenced by recently published European Commission's [Digital Economy and Society Index 2022](#), which states that "*spectrum assignment, an important precondition for the commercial launch of 5G, is still not complete: only 56% of the total 5G harmonized spectrum has been assigned, in the vast majority of Member States*".¹ This further confirms Ofcom's expectation that the existing mobile spectrum holdings and spectrum already planned for release are likely to be broadly sufficient to meet future demand to 2030 (see *Consultation* at paragraph 4.2.13). Moreover, the IMT proponents are also advocating for alternative mid-band spectrum in the 7-15 GHz range.²

Point #5 Any IMT identification in the 6425—7125 MHz would disrupt ongoing development of 6 GHz Wi-Fi ecosystem

Wi-Fi Alliance asks Ofcom to take in to account that this *Consultation* comes at a pivotal time in the development of the Wi-Fi ecosystem. Last year, Wi-Fi Alliance introduced the new [Wi-Fi 6E brand](#) to distinguish the latest generation Wi-Fi 6 devices that are capable of 6 GHz operation. Wi-Fi 6E brings a common industry name for Wi-Fi users to identify devices that offer the features and capabilities of Wi-Fi 6 – including higher performance, lower latency, and faster data rates – extended into the 5925–7125 MHz frequency band. And Wi-Fi continues its rapid rate of innovation with work underway within Wi-Fi Alliance to define next-generation of Wi-Fi (i.e., [Wi-Fi 7](#)). Wi-Fi 7 is intended to deliver unprecedented quality of service at higher data rates and lower latencies necessary for a growing set of demanding applications and use cases such as VR/AR/XR, Industrial IoT, automotive, telepresence, immersive 3-D. Based on [IEEE 802.11be](#) standard, Wi-Fi 7 will support channel bandwidths of up to 320 MHz, Multi-link Operation, 4096-QAM, improved power consumption with Target Wake Time other features. Wi-Fi 7 optimal performance will depend on access to multiple wider (e.g., 320 MHz) channels in the 6 GHz band. All these efforts would be jeopardized by an IMT identification in the 6425-7125 MHz band at WRC-23.

¹ See EC Digital Economy and Society Index 2022: overall progress but digital skills, SMEs and 5G networks lag behind available at https://ec.europa.eu/commission/presscorner/api/files/document/print/en/ip_22_4560/IP_22_4560_EN.pdf

² See for example, GSA contribution on WRC-23 Agenda Item 10, [PTA\(22\)038](#):

	<p style="text-align: center;">Wi-Fi Alliance Recommendation</p> <p>In light of the above, on the issue of WRC-23 Agenda Item 1.2 (6 425-7 125 MHz), Wi-Fi Alliance respectfully asks Ofcom to oppose IMT identification in the frequency band 6 425 – 7 125 MHz (i.e., UK to propose no change (“NOC”) to 6 425-7 025 MHz in Region 1 and 7 025-7 125 MHz worldwide). In doing so, the UK would join a growing list of countries that seek to preserve and advance development of the Wi-Fi ecosystem at WRC-23 (see for example US Proposal).</p>
<p>Question 3d: What are your thoughts on the current UK view that IMT should not be identified in Region 2 in the band 10-10.5 GHz in order to ensure the protection of the globally operating EESS (active) systems and airborne & vessel mounted radars?</p>	<p>No response</p>
<p>Question 4: Do you agree that, where no additional technical limitations are placed on mobile services, the UK can support an upgrading of the mobile allocation, in 3600 - 3800 MHz, from secondary to primary?</p>	<p>No response</p>

<p>Question 5: What are your views on the development of regulatory conditions to facilitate deployment of high altitude IMT base stations in IMT identified bands below 2.7 GHz?</p>	<p>No response</p>
<p>Question 6: Do you agree that a formal modification to the Radio Regulations is not needed for fixed service applications that use IMT technologies?</p>	<p>No response</p>
<p>Question 7: What are your views on the proposed approach for 470-694 MHz, recognising the national decisions already in place and taken for DTT multiplex licensing in the band, and the additional and supplementary spectrum made available for UK PMSE usage?</p>	<p>No response</p>
<p>Question 8: What are your views on the need to establish an international regulatory environment that provides adequate protection of UK fixed links from earth stations in motion, in the band 12.75 – 13.25 GHz, which is also practicable from an enforcement/implementation perspective?</p>	<p>No response</p>
<p>Question 9: Do you agree that the UK continues to support the maritime distance figure for ESIMs that work to non-geostationary satellites and to test the other conditions agreed at WRC-19 for ESIMs working to geostationary satellites to ascertain whether these remain appropriate for non-geostationary satellites?</p>	<p>No response</p>
<p>Question 10: What are your views on whether an allocation to inter satellite links is necessary for existing satellite allocated bands and whether this would provide benefits internationally?</p>	<p>No response</p>
<p>Question 11: What are your views on the need for additional satellite allocations in support of narrowband IoT “M2M” type applications, noting that there remains the</p>	<p>No response</p>

continued use of PMSE for wireless cameras in the band 2010 – 2025 MHz?	
Question 12: What are your views on the proposed approach to this agenda item concerning the fixed satellite service in 17.3-17.7 GHz in Region 2?	No response
Question 13a: On Topic B, what are your views on the post milestone procedures for non-geostationary satellite systems?	No response
Question 13b: On Topic L, what are your views on regulatory conditions for Telemetry, Tracking and Command (TT&C) for NGSO in-orbit servicing?	No response
Question 13c: What are your views on the remaining topics currently listed for Agenda Item 7?	No response
Question 14: Noting that any UK position will be developed only after the ITU Plenipotentiary Conference, do you have any comments relating to the use of Article 48 that may be addressed at WRC-23?	No response
Question 15: What are your views on the need to establish an international regulatory environment for sub-orbital vehicles, which at the same time does not limit flexibility of spectrum options, and retains international safety considerations?	No response
Question 16: Do agree that where the adjacent band compatibility issues are addressed and ICAO coordination processes are not compromised, that the addition of an aeronautical satellite (AMS(R)S) allocation to the band can be supported?	No response
Question 17: Do agree that functions related to international aviation safety are a matter for ICAO? On this basis, and absent any contrary information from ICAO, should the UK support the development of an international spectrum regulatory framework	No response

<p>for UA use of FSS that would support efficient use of spectrum?</p>	
<p>Question 18: Recognising the recent diminishing industry interest in this item relating to possible modification of the aeronautical HF assignment plan, and the general lack of global interest, do you agree that UK move towards a No Change proposal under this agenda item?</p>	<p>No response</p>
<p>Question 19: What are your views on the need for additional spectrum, specifically in the 15 and 22 GHz bands, for non-safety aeronautical use?</p>	<p>No response</p>
<p>Question 20: What are your views on Agenda Item 1.11 and the proposed UK position to support modernisation of GMDSS?</p>	<p>No response</p>
<p>Question 21: What are your views on the approach to the review of 1240-1300 MHz, recognising that discussions concerning future satellite navigational needs for the UK are a matter for Government?</p>	<p>No response</p>
<p>Question 22: What are your views on a new spectrum allocation in the 40-50 MHz range to support and enhance climate monitoring, such as, environmental shifts in ice sheets?</p>	<p>No response</p>
<p>Question 23: What are your views on upgrading the Space Research Service allocation, from secondary to primary, in the 14.8-15.35 GHz band?</p>	<p>No response</p>
<p>Question 24: What are your views on the potential for defragmentation in this band to facilitate both EESS (passive) use and provide for larger contiguous blocks for fixed & mobile allocations?</p>	<p>No response</p>
<p>Question 25: Do you agree that formal international recognition for Space Weather Sensors should be implemented in the Radio Regulations?</p>	<p>No response</p>

Question 26: What are your views on the limits proposed to protect EESS (passive) under Agenda Item 9.1 topic d) and do you have any views on which of these limits might be accommodated in the Radio Regulations and how?	No response
Question 27: Do you agree that the formalised time reference in common global use, is not a matter of spectrum regulation?	No response
Question 28: Do you have any comments concerning the Standing Agenda Items, where not covered elsewhere in this document?	No response
Question 29: Do you have a view on any of the footnotes to which UK is a party?	No response
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?	No response
Question 31: Do you have any comments on Agenda Item 9.3 considering Resolution 80?	No response
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?	Confidential? – Y / N
Question 33: What are your views on the use of IMT stations that use antennas that consists of an array of active elements, in bands shared with satellite services?	No response

Please complete this form in full and return to wrc-23.respond@ofcom.org.uk.