

Consultation title	Fixed wireless spectrum strategy: Consultation on proposed next steps to enable future uses of fixed wireless links
Organisation name	Wi-Fi Alliance® *

* Wi-Fi Alliance® is a global, non-profit industry association of over 700 leading companies from dozens of countries devoted to connecting everyone and everything everywhere. With technology development, market building, and regulatory programs, Wi-Fi Alliance® has enabled widespread adoption of Wi-Fi worldwide, certifying thousands of Wi-Fi products each year. The mission of Wi-Fi Alliance® is to provide a highly effective collaboration forum for Wi-Fi matters, grow the Wi-Fi industry, lead industry growth with new technology specifications and programs, support industry-agreed standards, and deliver greater product connectivity through interoperability, testing, and certification.

Studies conducted by Cisco¹ show that Wi-Fi continues to be one of the fastest growing elements of the wireless market: in 2015, global Wi-Fi traffic was 55.2% of Internet traffic, and it will be 59.1% of total Internet traffic in 2020, meaning that, with increases in total Internet traffic, in three years Wi-Fi networks will be carrying three times as much content as they were in 2015. To support this massive increase in use of Wi-Fi capacity will require more spectrum and greater use of spectrum already available for Wi-Fi operations. Wi-Fi Alliance®² own research indicates that countries will need to find between 500 MHz and 1 GHz of new spectrum for RLANs by 2025 in order to keep up with growing demand for, and increased use of, these networks.

Response

<p>Question 1: Do you agree that we have identified the key drivers likely to have a significant impact on the spectrum demand for fixed wireless links? If not, please provide further detail and evidence to support your answer.</p> <p>Do you have other comments to make/points to raise with us on these issues?</p>	<p>Confidential? – N</p> <p>Wi-Fi Alliance® has not responded to this question.</p>
<p>Question 2: Do you agree with our conclusions on spectrum implications and our proposed strategy/next steps for each band?</p> <p>Are there any other considerations of significance that you feel we should have included or do you have other comments to make/points to raise with us on these issues?</p>	<p>Confidential? – N</p> <p>While the Wi-Fi Alliance® acknowledges the progress and leadership Ofcom has shown opening the 5725-5850 MHz, this initiative has yet to be adopted by other Administrations. Wi-Fi Alliance® is fully supportive of initiatives associated with 5925-6425 MHz and 6425-6925 MHz relating to finding new spectrum for RLANs. Wi-Fi Alliance® is proactively engaged with the two recently created CEPT</p>

¹ Cisco, *VNI Complete Forecast Highlights Tool*, [Cisco VNI Forecast Highlights](#)

² Wi-Fi Alliance, *Spectrum Needs Study, Final Report*, February 2017 [WFA Spectrum Needs Study](#)

Please provide as much detail as possible to support your answer.

project teams ECC SE45 and ECC FM57 to study the feasibility of RLAN use at 5925-6425 MHz and the different coexistence issues with incumbent services. We have some concerns however that the Radio Spectrum Committee (RSC), the European Commission, and Member States took a decision to limit the European Commission mandate to CEPT to look at the feasibility of RLAN use in only the 5925-6425 MHz range and did not consider a wider range up to 6925 MHz or even 7125 MHz (as referred to “upper 6GHz” in the consultation).

Wi-Fi Alliance® supports efforts to make the **66-71 GHz** band available for licence-exempt use. The International Telecommunications Union has confirmed plans to implement licence exempt (non-IMT) 5G networks in this band. In addition, a number of countries target the 66-71 GHz band for implementation of licence-exempt 5G (e.g., WiGig) technologies. In the United States, for example, FCC [decided](#) to maintain the licence-exempt use of the 64-71 GHz band and to expand these operations on board aircraft in flight. Moreover, there are no technical basis to confirm compatibility of IMT-2020 with the planned licence-exempt 5G operations in 64-71 GHz band. In light of the above, it is likely that many countries will implement non-IMT systems in the 64-71 GHz band, thereby, negating potential spectrum use harmonization benefits.

Considering that within the existing European Union regulatory framework the use of spectrum is made possible with the existence of the appropriate ETSI standard, Wi-Fi Alliance® supports the efforts to produce such standards as needed on a timely basis. Wi-Fi Alliance® appreciates the long term engagement in this activity by Ofcom and hopes that Ofcom will continue this work for the 6 GHz and mmWave bands. As Ofcom has been a pioneer of regulation for RLAN use and a partner of innovation for the industry in the past, Wi-Fi Alliance® expects that this will continue to be the case for the standardization needed in the 6 GHz.

Question 3: Do you agree with the items we have identified for further consideration? Are there any other significant areas that you believe should be included? If so, please

Confidential? – N

Amongst other areas identified by Ofcom, it is the opinion of the Wi-Fi Alliance® that there is a need for further review and

<p>include all necessary evidence to support your view.</p>	<p>discussion relating to the 57-66 GHz and 66-71 GHz band (V band). We believe that a regulatory framework is needed to enable alternative fixed wireless topologies such as point to multipoint, mesh, as well as mobile applications and services.</p>
<p>Question 4: Do you agree with our proposal to change the authorisation regime in the 64 – 66 GHz band to licence exempt to create a common authorisation approach across the 57 – 66 GHz band for fixed outdoor installation use and that this would be a benefit to UK citizens and consumers?</p>	<p>Confidential? – N</p> <p>Wi-Fi Alliance® agrees that achieving a single authorisation approach to facilitate fixed outdoor use across the full 57-66 GHz band is desirable which would mean changing the current authorisation regime for fixed point to point use in the 64-66 GHz band to a licence exempt approach. As Ofcom states, manufacturers/ stakeholders/citizen consumers will benefit from economies of scale provided by a harmonised availability of spectrum across the wider European market and already existing products.</p> <p>Wi-Fi Alliance® would also like to add that the current technical conditions for wideband data transmission for road transport and telematics (SRD) with a maximum EIRP of 40 dBm for operation in a non-fixed outdoor installation remain appropriate to facilitate outdoor mobile/portable devices however they should be moved into the Channel 4 (63.72-65.88 GHz) to align it with WiGig channel arrangement.</p> <p>We also believe that mobile applications and services should not be precluded considering that this range already has a co-primary Mobile allocation at a Global and Regional level.</p>
<p>Question 5:</p> <p>a) Do you agree with the proposed new technical conditions in Table 6 to facilitate equipment intended for fixed outdoor installation in the 57 – 66 GHz band? Please provide evidenced views /alternatives if you disagree with our proposal. Do you consider any additional conditions should be mandated as part of a licence exemption to manage the interference environment?</p>	<p>Confidential? – N</p> <p>Wi-Fi Alliance® Response to Question 5a)</p> <p>To facilitate new outdoor use cases across the 57 – 66 GHz band, Wi-Fi Alliance® supports revision to the appropriate technical conditions while ensuring users of equipment installed outdoor can operate with a low probability of interference under a licence exempt approach.</p> <p>For equipment operating at EIRP level of 40 dBm and below, Wi-Fi Alliance® supports the Ofcom proposal to relax the existing</p>

b) Do you agree with our assessment that the proposed changes in technical conditions will have minimal impact on existing use and are appropriate to manage the future outdoor interference environment?

c) Are there likely to be any fixed outdoor installation use cases that will require operation at eirp levels above 55 dBm? If so, please provide evidence of how the coexistence with the different outdoor users could be ensured?

minimum antenna gain requirement of 30 dBi to 20 dBi and to remove the maximum output power limitation.

For higher power operation, Wi-Fi Alliance® supports Ofcom's proposal to retain the existing minimum antenna gain requirement of 30 dBi and maximum output power of 10 dBm for equipment operating at EIRP levels of 40 dBm to 55 dBm since this will maintain the current co-existence environment as is presently in place for higher power operation.

Wi-Fi Alliance® Response to Question 5b)

Wi-Fi Alliance® supports Ofcom's position related to Short Range Devices in the 57-66 GHz band in so much that the impact to mobile/portable SRD will not be greater than that experienced currently. Wireless multi-gigabit access points that could be installed outdoor to provide access and offload would be enabled by the proposed relaxation in technical conditions. These would operate in a similar interference environment to other outdoor uses such as small cell backhaul and fixed wireless access.

Wi-Fi Alliance® confirms that there is a new work item recently initiated in ETSI on technical characteristics of multiple gigabit wireless systems (MGWS) in radio spectrum between 57-71 GHz including proposal to move the existing road transport and telematics (ITS) in the 63- 64 GHz band to a single MGWS channel.

Wi-Fi Alliance® Response to Question 5c)

Wi-Fi Alliance® is not aware of any fixed outdoor installation use cases that will require operation at EIRP levels above 55 dBm.

Question 6:

a) What are the use cases and technical parameters envisaged for the 66 - 71 GHz band? Are they likely to be similar to those in the 57 – 66 GHz band? If so, what are your views on extending the same or similar technical conditions as described above for the 57 - 66 GHz band (both existing wideband data transmission (SRD) and new fixed

Confidential? – N

Wi-Fi Alliance® Response to Question 6a)

Wi-Fi Alliance® believes that the ETSI System Reference Document on 60 GHz will provide some specifics on the use cases and technical parameters envisaged for the 66 - 71 GHz band

outdoor technical conditions) to the 66 – 71 GHz band to facilitate both fixed and mobile use cases.

b) Please provide your view on whether the technical parameters of wideband data transmission (SRD) as shown in Figure 4 are suitable to facilitate mobile/portable equipment including use outdoor? If you do not consider they are suitable, what alternative technical parameters do you think should be considered?

Please provide as much detail to your answer as possible and your considerations on the co-existence aspects.

Wi-Fi Alliance® agrees that 5G applications envisaged in the 66-71 GHz band are likely to encompass both fixed and mobile use cases. While we acknowledge 66-71 GHz will be important from a 5G perspective and should be made available on a licence exempt basis, like the 57-66 GHz band which is being made available in many countries for licence exempt use by multi-gigabit applications, our preference is **not** to seek an “IMT” identification for either band.

We are concerned that if 66-71 GHz is designated for IMT then other technologies currently accessing the 57-66 GHz band today could be precluded from accessing the 66-71 GHz band. Furthermore, licence exempt use of the 66-71 GHz band by multi-gigabit applications, can be implemented in a similar way as for the 57-66 GHz band, based on the existing allocation to the Mobile Service in the ITU Radio Regulations as further detailed in Recommendation ITU-R M.2003 “Multiple Gigabit Wireless Systems in frequencies around 60 GHz” for which a revision extends the frequency range up to 71 GHz.

Wi-Fi Alliance® Response to Question 6b)

Wi-Fi Alliance® has not responded to this question.

Question 7: Do you agree that there is a continued need for future low capacity fixed link applications?

If so, please provide information to support your view and what alternatives you would consider appropriate should the upper 1.4 GHz band no longer be available.

Please provide clear evidence to support the reasons for your views.

Confidential? – N

Wi-Fi Alliance® does not consider it spectrally efficient to migrate narrow 3.5 MHz channel fixed links from 1.4 GHz to the 6 GHz band. It is also not clear what is meant by “the use of smaller channels in the gaps within 6 GHz spectrum”. We are also aware that there is a lack of equipment availability for narrow band deployment at 6 GHz.

The 3.5 MHz channel fixed links at 1.4 GHz was a technology of the last century already replaced by 5 MHz and wider channels due to increased throughput demand. Meanwhile in the majority of areas where the fixed links at 1.4 GHz were deployed there is sufficient density of optical fibre backhaul where these links could be migrated to.

<p>Question 8:</p> <p>Do you consider there is merit in considering making the bands 52 GHz and 55 GHz available under alternative authorisation approach(es) such as block assignment? If so, what would you consider to be the best approach(es)? Please provide detailed views to support your response.</p>	<p>Confidential? – N</p> <p>Wi-Fi Alliance® has not responded to this question.</p>
<p>Question 9:</p> <p>Do you think we should review our authorisation approach to any other band used for fixed wireless links?</p>	<p>Confidential? – N</p> <p>Wi-Fi Alliance® has not responded to this question.</p>
<p>Question 10:</p> <p>a) How do you envisage W band and D band will be used for mobile backhaul provision and the likely timescales? Please provide as much detail as possible on deployment scenarios and whether this would include indoor use. Are there any other types of applications (other than mobile backhaul) that could be suited for these bands?</p> <p>b) What are your views on the most appropriate authorisation approach for the W and D bands? Please provide as much detail and technical evidence as possible in your answer.</p>	<p>Confidential? – N</p> <p>Wi-Fi Alliance® Response to Question 10a) Wi-Fi Alliance® has not responded to this question.</p> <p>Wi-Fi Alliance® Response to Question 10b) Wi-Fi Alliance® has not responded to this question.</p>
<p>Question 11: Which capacity enhancing technique(s) are you using or planning to use? Please provide detail / evidence and clearly explain why and how each technique is planned to be used and if you consider there are any other aspects that should be considered.</p>	<p>Confidential? – N</p> <p>Wi-Fi Alliance® Response to Question 10a) Wi-Fi Alliance® has not responded to this question.</p>