

Your response

Question	Your response
Question 1: Do you have any comments on our proposal to open access to the 5925-6425 MHz band for licence-exempt Wi-Fi use?	<p>Founded in 2003, the vision of the Wireless Broadband Alliance (WBA) is to drive seamless, interoperable service experiences via Wi-Fi within the global wireless ecosystem. WBA's mission is to enable collaboration between service providers, technology companies and organizations to achieve that vision. WBA undertakes programs and activities to address business and technical issues, as well as opportunities, for member companies.</p> <p>WBA work areas include advocacy, industry guidelines, trials and certification. Its key programs include NextGen Wi-Fi, 5G, IoT, Testing & Interoperability and Roaming, with member-led Work Groups dedicated to resolving standards and technical issues to promote end-to-end services and accelerate business opportunities. WBA's membership is comprised of major operators and leading technology companies, including Broadcom, BSNL, Deutsche Telekom AG, Facebook, Google, HPE Aruba, Huawei, Ruckus-Wireless, Shaw, SK Telecom and T-Mobile US.</p> <p>The WBA Board includes AT&T, Boingo Wireless, Broadcom, BT, Cisco Systems, Comcast, Deutsche Telekom AG, GlobalReach Technology, Intel, KT Corporation and SKT. For a complete list of current WBA members, click here.</p> <p>Therefore, WBA Members would like to share its Annual Industry Report developed by an independent analyst and covers among other topics the following – mainly on Chapter 4 and 6:</p> <ul style="list-style-type: none">• Implications of opening the 6GHz band to Wi-Fi by first clarifying what Wi-Fi 6 is and then by detailing how Wi-Fi will make use of this added spectrum: 78% consider 6 GHz key to network strategy;• The role of Wi-Fi as a prominent Radio Access Technology and its convergence & coexistence with cellular 5G NR: 66% planning to deploy Wi-Fi 6 connectivity compared to 35% 5G NR;• Rising confidence in license-exempt spectrum technologies with 79% either had more confidence, or the same level, as they did a year earlier <p>The WBA welcomes Ofcom's proposal to make the band 5925-6425 MHz available for license-exempt Wi-Fi use, and applauds its leadership to set the pace for other European and CEPT countries to follow by moving ahead now to bring the diverse economic, productivity, innovation and social benefits enabled by this band.</p> <p>The availability of additional wide and contiguous mid-band spectrum for Wi-Fi is critical to meet the rapidly increasing capacity demands of UK consumers and enterprises and achieve the objective of creating a national Gigabit Society. At the same time, with the sensible technical</p>

conditions and device classes proposed by Ofcom this band can be safely opened to an underlay of license-exempt usage.

Making available license-exempt spectrum in the 6 GHz band is expected to generate considerable additional socio-economic benefits for the UK, as detailed in this [study](#) published by the Wi-Fi Alliance. According to the study, the total economic value of Wi-Fi in the United Kingdom in 2018 amounts to £41.8 billion, which is roughly equivalent to the GDP of Slovenia.

Ofcom's leading role in opening the 5925-6425 MHz band for license-exempt use will directly and rapidly benefit consumers and enterprises in the UK by enabling the use of the latest generation Wi-Fi (i.e., Wi-Fi 6E) services in their homes, offices, and public spaces – keeping pace with the higher capacities being offered by next-generation fixed and wireless broadband access technologies.

The 6 GHz band provides the capacity, efficiency, coverage, and performance required by users in the most demanding environments, such as stadiums, airports, train stations, and other public venues with hundreds or thousands of connected devices. Enterprise applications such as warehouse management and factory automation will benefit from the larger number of available channels, the very low latencies, and the wide channel bandwidths offered by Wi-Fi 6E in the 5925-6425 MHz “greenfield” band.

Additionally, WBA urges Ofcom to consider developing regulatory conditions for the deployment of high-power outdoor Wi-Fi in the 5925-6425 MHz band which could operate in a coordinated manner, e.g. by applying automated frequency coordination (AFC), or under a light-licensing regime. While the UK has a significant number of 6 GHz fixed service (FS) links, they are in well-defined geographies that could be easily protected, allowing targeted outdoor use in areas where it is most needed. While parts of the 6 GHz band may not be usable in some locations due to proximate usage of FS links, a significant amount of the country may well be available for controlled outdoor usage.

This includes serving high capacity outdoor venues that are desperate for additional spectrum that would be otherwise disallowed under the low-power indoor and very-low power mobile categories, and which Ofcom itself forecasts as seeing a 15X increase in demand over the next 10 years. This also includes important outdoor industrial and enterprise environments such as container terminals, rail terminals, oil & gas installations, and municipal outdoor hotspot zones. And last but not least rural broadband depends on low-cost, license-exempt Wi-Fi to bring high speeds to millions of users who are often underinvested by cellular telecommunications advances. 6 GHz can help avoid the emergence of a “5G digital divide” in the UK by providing the 5G experience to users who otherwise will not see macro service for many years.

	<p>In parallel, airborne use of the relevant 6 GHz enabled equipment would be permitted within an aircraft only to establish a connection with a station or apparatus within the same aircraft, as an example from Boeing that officially submitted a response (link) to FCC, in fact, within the aircraft fuselage might be regarded as indoor environment. As a result, WBA encourages Ofcom to define Wi-Fi use within an aircraft fuselage as indoor use for the purpose of this consultation. Connectivity is growing exponentially and there is an immediate demand for high-bandwidth for provisioning multimedia within the aircraft and internet connectivity (link).</p> <p>Furthermore, WBA would like to encourage Ofcom to consider evaluating also the 6425-7125 MHz band for licence-exempt use. Considering that the incumbent users in the UK are essentially the same in the 5925-6425 MHz and the 6425-7125 MHz bands the compatibility and sharing studies performed within CEPT - which currently indicate that sharing is possible for low power indoor (up to 250 mW) and very low power outdoor (25 mW) Wi-Fi deployments - are equally valid in both bands.</p> <p>Making additional spectrum in the 6425-7125 MHz band available for Wi-Fi will also be a pre-requisite for a successful introduction of future high-performance Wi-Fi technologies in the UK. IEEE is on the path of standardizing 802.11be (Wi-Fi 7) which will enable new use cases requiring extremely high throughputs by utilising channel bandwidths of up to 320 MHz. Without additional spectrum, only one 320 MHz channel would be available in the UK which would severely limit the usability of 802.11be. By opening the entire 6 GHz band for licence-exempt use the UK would create the conditions to benefit fully and sustainably from product economies of scale.</p>
<p>Question 2: Do you have any comments on our technical analysis of coexistence in the 5925-6425 MHz band?</p>	<p>WBA commends the approach taken by Ofcom to conduct studies on the actual population of fixed links in the UK and use to the greatest extent possible actual system characteristics and real-world data of the deployment conditions and environment, such as terrain data and building height distributions.</p> <p>WBA agrees with Ofcom's conclusion that Wi-Fi can operate indoors with up to 250 mW EIRP, and outdoors with up to 25 mW EIRP on a licence-exempt basis without affecting incumbent services' operations in the 5925-6425 MHz band and that these technical conditions would be sufficient to enable the envisaged low power indoor (LPI) and very low power (VLP) outdoor use cases. It is important to emphasize that the results of Ofcom's analysis are supported by other independent analyses provided in ECC Report 302, Draft ECC Report 316, and CEPT Report 73.</p> <p>As stated in the consultation document, several conservative assumptions were made in the Ofcom analysis, e.g., that all LPI and VLP RLAN devices are operating at maximum EIRP levels and that building entry loss is merely 12 dB. This further confirms our view (which is in</p>

	<p>line with Ofcom’s conclusion) that under the proposed conditions licence-exempt Wi-Fi can safely operate in the 5925-6425 MHz band.</p> <p>We would encourage Ofcom to consider increasing the maximum mean EIRP density from 10mW/MHz to 12.59mW/MHz in any 1 MHz band, because this will enable a 20 MHz channel to realize 250mW average EIRP. This is important because Wi-Fi control signalling is conducted on 20 MHz channels and this would allow same total power for all Wi-Fi bandwidths.</p>
<p>Question 3: Do you agree with our proposal to remove DFS requirements for indoor Wi-Fi up to 200mW from the 5725-5850 MHz band?</p>	<p>WBA strongly supports Ofcom’s proposal to remove the DFS requirements for Wi-Fi operation in the 5725-5850 MHz band. We also share Ofcom’s view that the risk of undue interference from indoor Wi-Fi use to radars is extremely low.</p>
<p>Question 4: Do you have any comments on other options that may be available for Wi-Fi and RLANs within the 5 GHz band?</p>	<p>WBA invites Ofcom to consider aligning the regulatory conditions for the 5725-5850 MHz band with those for the 5150-5250 MHz band recently resolved by WRC-19, i.e. to allow unrestricted indoor use with a maximum transmit power of 200 mW e.i.r.p. and controlled indoor and outdoor use with a maximum transmit power of 1 W e.i.r.p.</p> <p>Considering that a number of countries including Canada, India, Japan, New Zealand, Mexico, South Korea, and the U.S. intend to or already do operate outdoor Wi-Fi in the 5150-5250 MHz band at a higher EIRP level of up to 4 W, we ask Ofcom to review and possibly align the regulatory conditions for Wi-Fi outdoor operation in this band which would benefit industrial uses such as container terminals, rail terminals, oil & gas installations as well as large public outdoor venues.</p> <p>With respect to requests made to expand current DFS requirements to include detection of fast frequency hopping radars we would like to express our serious concerns. Fast frequency hopping radars are designed to make detection difficult or avoid it altogether. Requiring a Wi-Fi device, be it a consumer router or enterprise access point to implement the capability to detect the undetectable will result in increased product cost and/or abandoning of the affected bands, thus further aggravating spectrum scarcity.</p>