



NOKIA CONTRIBUTION

RESPONSE TO OFCOM's consultation

“Improving spectrum access for Wi-Fi – spectrum use in the
5 and 6 GHz bands”

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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>Nokia agrees with the view that the use of licence-exempt spectrum will continue to grow with the increased consumption of connectivity by both consumers and enterprises. To meet this growing demand, availability of sufficient spectrum is key. As such, allocating wide contiguous spectrum in the 5925-6425 MHz mid-band range is critical for the further development of license-exempt WAS/RLAN technologies, such as Wi-Fi and 5G NR-U.</p> <p>The opening of the 5925-6425 MHz spectrum range to WAS/RLAN technologies will positively impact the user experience accessing bandwidth-intensive applications such as high-definition video streaming, augmented and virtual reality, etc. This new spectrum will allow for further innovation in high-performance WAS/RLAN, and its regulation should be done accordingly.</p> <p>Moreover, the 6 GHz band can benefit of its vicinity to the 5 GHz licence-exempt bands having as such rapid access to a suitable ecosystem, with chipsets and RF front-end modules available as soon as H2 2020.</p> <p>The access to 5925-6425 MHz band shall be open to both NR-U and Wi-Fi 6E technologies:</p> <ul style="list-style-type: none">- NR-U will use channel bandwidths in multiples of 20 MHz, being able to provide carrier aggregation functionalities;- Wi-Fi 6E will benefit of up to 6 additional 80 MHz channels or 3 additional 160 MHz channels; <p>Operations in this band will allow both technologies to deliver greater network performance for both fixed and mobile markets, serving a higher number of concurrent users, including in very dense and congested environments.</p> <p>The early opening of the 5925-6425 MHz band for license-exempt use by Ofcom likely makes UK the first CEPT member state to open 5925-6425 MHz for operational use for WAS/RLAN.</p> <p>While other regions or countries may take different licensing approaches in the lower 6 GHz band, 5925-6425 MHz, Nokia agrees with Ofcom's proposal to use this band on licence-exempt basis and sees opportunities for both mass-market and enterprise use. We support, as such, its use accordingly, while – where necessary – protect the incumbent users.</p>

Question	Your response
<p>Question 2: Do you have any comments on our technical analysis of coexistence in the 5925-6425 MHz band?</p>	<p>As previously mentioned, Nokia supports the use of the 5925-6425 MHz band for licence-exempt use while protecting the FS links. We recommend that Ofcom defines the regulation of the band for licence-exempt use that would also include outdoor use with a maximum EIRP of up to 1W under the control of an Automated Frequency Coordination (AFC) system like the USA Federal Communications Commission (FCC)¹ is considering. This AFC would allow the identification of frequencies on which outdoor unlicensed devices could operate without causing harmful interference to fixed links.</p> <p>We agree with OFCOM that “people in the UK may be able to benefit from device availability and economies of scale for new, innovative technologies if this band is opened up both internationally and in the UK for similar purposes”. UK will be able to benefit not only from the device ecosystem but also from innovative spectrum sharing technology that countries like USA are developing to maximize use of 6GHz spectrum. This would allow outdoor use of the spectrum while coexisting with incumbents fixed links.</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>We agree that the removal of DFS requirements <u>for</u> indoor devices in the 5725-5850 MHz range, leading to easier access to the band, will provide significant benefits to users. We acknowledge that several administrations expressed concerns about ensuring the indoor use of licence exempt equipment is respected where required. We therefore welcome any proposals on how to effectively manage and control such indoor use in order to avoid harmful interference to the incumbents.</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>No comment</p>

¹ See Federal Communications Commission, “Unlicensed Use of the 6 GHz Band Notice of Proposed Rulemaking”, ET Docket No. 18-295; GN Docket No. 17-183, Released October 24, 2018