IEEE P802.18
Radio Regulatory Technical Advisory Group (RR-TAG)

Draft response to the UK Ofcom's consultation: Plan of Work 2025/26

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This document contains the draft of a proposed IEEE 802 LMSC response to the UK Ofcom's consultation "Plan of Work 2025/26".

Consultation response form

Please complete this form in full and return to planofwork@ofcom.org.uk

Consultation title	Consultation: Ofcom's Plan Of Work 2025/26
Full name	James Gilb
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Confidentiality

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Your details: We will keep your contact number and email address confidential. Is there anything else you want to keep confidential? Delete as appropriate.	Nothing
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Your response

Question	Your response
Question 1: Do you have any comments on Ofcom's proposed Work Plan for 2025/26?	Confidential? – N IEEE 802 LMSC is a leading consensus-based open standards development committee for networking standards that are used by industry globally. It produces standards for networking devices, including wired and wireless local area networks ("LANs" and "WLANs"), wireless specialty networks ("WSNs"), wireless metropolitan area networks ("Wireless MANs"), and wireless regional area networks ("WRANs"). Technologies produced by implementers of our standards are a critical element for all networked applications today. IEEE 802 LMSC is a committee of the IEEE Standards Association and of Technical Activities, two of the Major Organizational Units of the IEEE. IEEE has over 460,000 members in more than 190 countries and its core purpose is to foster technological innovation and excellence for the benefit of humanity. IEEE is also a major accredited standards development organization whose standards are recognized worldwide. In submitting this document, IEEE 802 LMSC acknowledges and respects that other components of IEEE Organizational Units may have perspectives that differ from, or compete with, those of IEEE 802 LMSC. Therefore, this submission should not be construed as representing the views of IEEE as a whole[1]. IEEE 802 LMSC follows Ofcom's regulatory activities regarding license-exempt short-range devices closely and applauds Ofcom for developing the latest version of the Plan of Work. Please find the IEEE 802 LMSC comments below. **Update on IEEE 802.11be (a.k.a. Wi-Fi 7) and IEEE P802.11bn** While IEEE 802 LMSC appreciates Ofcom's proposed plan to "make the upper 6 GHz band available for additional services taking account of international development" (c.f., page 42 of the consultation), IEEE 802 LMSC, however, respectfully asks Ofcom to establish a clear timeline in making the decision.

[1] This document solely represents the views of IEEE 802 LMSC and does not necessarily represent a position of either the IEEE or the IEEE Standards Association or the IEEE Technical Activities.

Question	Your response
	In January 2024, Wi-Fi Alliance introduced[2] Wi-Fi CERTIFIED 7™ based on IEEE Std 802.11be-2024 technology[3]. With Wi-Fi 7 products already on the market, Wi-Fi deployments are going through a second-generation upgrade supporting the entire 6 GHz band globally[4]. IEEE Std 802.11be-2024's global 6 GHz channelization is designed to accommodate multiple 160 MHz and 320 MHz channels throughout the 5925 MHz to 7125 MHz band, where available. In November 2023, the IEEE 802.11 Working Group approved the creation of a new project, IEEE P802.11bn[5], to work on a major amendment, entitled "Enhancements for Ultra High Reliability" for next generation wireless LAN that applies to carrier frequency operation between 1 GHz and 7.250 GHz. Of note is that backward compatibility and coexistence with legacy IEEE 802.11 devices in the 2.4 GHz, 5 GHz, and 6 GHz license-exempt bands will be ensured. IEEE P802.11bn, which is also known as Wi-Fi 8, targets increasing medium access control (MAC) throughput by 25%, improving latency by 25%, and reducing the MAC Protocol Data Unit (MPDU) loss by 25% relative to IEEE Std 802.11be-2024. This project also aims to provide a mechanism to reduce power consumption for access points (APs) (including mobile APs) and improved peer-to-peer (P2P) operation compared to IEEE Std 802.11be-2024 operation. **Recommend to authorize the upper 6 GHz band for license-exempt operation** Authorizing the entire 6 GHz band for Wi-Fi is critical to enabling latency sensitive high throughput applications like real-time XR for health, education and gaming, robotics, and industrial automation and sensory. For example, innovative use cases such as medical school

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[2] See Wi-Fi Alliance: Wi-Fi Alliance® introduces Wi-Fi CERTIFIED 7™, https://www.wi-fi.org/news-events/newsroom/wi-fi-alliance-introduces-wi-fi-certified-7 [accessed: 16 January 2025].

[3] See IEEE Approved Draft Standard for Information technology--Telecommunications and information exchange between systems Local and metropolitan area networks--Specific requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications Amendment: Enhancements for Extremely High Throughput (EHT), https://standards.ieee.org/ieee/802.11be/7516/ [accessed: 16 January 2025]. With introduction of 320 MHz channel bandwidth, Wi-Fi 7 doubles throughputs relative to Wi-Fi 6E and significantly improves latency for Extended Reality (XR), bringing determinism through enablement of Multi-Link Operation (MLO) over multiple bands in 2.4 GHz, 5 GHz, and 6 GHz bands. Wi-Fi 7 also provides higher efficiency, relative to Wi-Fi 6E, through offering of 4096 QAM. In addition, spectrum puncturing improves flexibility in utilizing spectrally efficient wide channel bandwidth, e.g., 160 MHz and 320 MHz, while protecting incumbent operation in the band.

[4] See Wi-Fi Alliance: Wi-Fi 7 market momentum: Wi-Fi 7 is here – is your network ready?, https://www.wi-fi.org/beacon/chris-hinsz/wi-fi-7-market-momentum-wi-fi-7-is-here-is-your-network-ready [accessed: 16 January 2025].

[5] See IEEE P802.11bn, https://www.ieee802.org/11/Reports/tgbn_update.htm [accessed: 16 January 2025].

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	training using AR/VR technologies require the spectrum available in the entire 6 GHz band.[6] In particular, this is critical to enable relevant applications in dense residential environments in addition to scaling of applications in enterprise and industrial deployments when multiple of these application sessions have to be supported simultaneously and in close proximity. With access to 320 MHz channels, Wi-Fi devices can build upon IEEE Std. 802.11az-2023 to offer sub-1 meter positioning accuracy, which results in new innovative use cases such as micro-targeting for retail and warehouse asset tracking.
	The availability of a large number of channels at various channel widths (from 20 MHz to 320 MHz) is facilitating more modular and flexible deployments that allow scaled operation of services in the above-mentioned target industries. Some examples[7] include multi-layer operation, service segmentation and prioritization, context-aware wireless networks, and hyper-aware access point deployments. Highly secure communication with WPA3 security[8], which is being now mandated for Wi-Fi devices operating in the 6 GHz band, further enhances these services and addresses new uses cases as well.
	The ITU World Radiocommunications Conference 2023 (WRC-23) explicitly recognized that the upper 6 GHz band is used for the implementation of wireless access systems (WAS), including radio local area networks (RLANs). Many countries, including the USA, Canada, Argentina, Saudi Arabia, and South Korea, have already allocated the entire 6 GHz band (i.e., 5925 MHz to 7125 MHz band) for license-exempt operation. Availability of the entire 6 GHz band for license-exempt use will create economies of scale and produce a robust equipment market, benefitting the UK's businesses, consumers, and economy, while supporting Ofcom's vision of providing significant societal benefits from the effective use of the radio spectrum.
	Conclusion
	IEEE 802 LMSC thanks Ofcom for the opportunity to provide this submission, and recommends that they consider opening the upper 6 GHz spectrum for licensed-exempt operation at the earliest possible opportunity. We

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[6] See Wi-Fi Alliance: Wi-Fi Alliance® demonstrates the impact of 6 GHz Wi-Fi® for advanced AR/VR in healthcare (https://www.wi-fi.org/beacon/the-beacon/wi-fi-alliance-demonstrates-the-impact-of-6-ghz-wi-fi-for-advanced-arvr-in) [accessed: 16 January 2025].

[7] Selected examples of frequency-band-agnostic new services and architectures include smart automation facilities (https://community.hpe.com/t5/networking/hyper-aware-facilities-will-drive-the-future-of-smart-automation/ba-p/7219007) [accessed: 16 January 2025]

[8] See Wi-Fi Alliance: Discovery Wi-Fi Security, https://www.wi-fi.org/discover-wi-fi/security [accessed: 16 January 2025] ("WPA3 is a mandatory certification for Wi-Fi CERTIFIED™ devices.")

Question	Your response
	further request Ofcom to establish a clear time timeline for this allocation.

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