

Your response

The undersigned companies, representing an important cross-section of the world's leading silicon vendors, system manufacturers, and application providers, welcome the opportunity to comment on Ofcom's proposed Plan of Work 2025/26 (the "Plan"). We fully support Ofcom's commitment to fostering innovation in mobile, satellite, and licence-exempt (Wi-Fi) services, and to enabling timely access to spectrum with flexible authorisation approaches.

We commend the Plan's commitment to "support economic growth through facilitating innovation in mobile, satellite and licence-exempt (Wi-Fi) services." The Plan also rightly notes the importance of "enabling timely access with flexible authorisation approaches and encouraging greater sharing between different applications and uses."

To that end, we recommend the UK urgently enable the upper 6 GHz band (6425-7125 MHz), which is used by satellite, radio astronomy and fixed links, to be shared by licence-exempt applications. Usage of this spectrum by licence-exempt technologies, on a low power basis indoors and on a very low power basis indoors and outdoors, would not create interference with existing services¹. The net result would be an increase in overall spectrum efficiency.

Such an authorisation would be timely: A very wide variety of Wi-Fi 6E and Wi-Fi 7 devices that can operate across the full 5925-7125 MHz band are already commercially available. The co-signatories to this response are seeing strong demand for 6 GHz-capable equipment, both Wi-Fi 6E and Wi-Fi 7. The longer it takes to open up the upper 6 GHz band to licence-exempt services, the greater the risk of falling behind the US, Canada, South Korea and other countries that have made this spectrum available for Wi-Fi.

Making the upper 6 GHz band licence exempt would enable UK consumers and businesses to take full advantage of fibre broadband networks that can support gigabit access. As things stand, the wireless interface can be a bottleneck in the user experience; wider Wi-Fi channels are needed to support reliable high-performance connectivity to each user.

In the UK, 25 million UK homes (83%) now have access to a gigabit-capable broadband connection, according to Ofcom's latest annual report. The proportion of households that have signed up to full-fibre broadband services, where available, rose from 28% in May 2023 to 35% (7.5 million households) in July 2024. With customers moving in greater numbers to higher-speed broadband packages, the UK average maximum download speed has also increased to 223 Mbps in 2024.

Indoor networks with 6 GHz powered Wi-Fi will provide the high-performance indoor connectivity the UK needs to fully capitalise on its long-term investment in fibre.

Benefits for business and the UK economy

For businesses, making the entire 6 GHz band licence-exempt is critical to enabling Wi-Fi networks to meet the growing demand for deterministic connectivity (i.e., which has specific requirements in terms of availability, throughput, jitter, latency, handover, etc.).

With access to the full 6 GHz band, Wi-Fi 6E and Wi-Fi 7 can support industrial applications, such as factory robots and sensors, augmented reality (AR), healthcare monitors and wireless medical equipment, that have stringent QoS (quality of service) requirements. Unlike previous generations of Wi-Fi, Wi-Fi 6/6E and Wi-Fi 7 are based on OFDMA technology and are thereby able to achieve very high QoS levels, particularly in managed networks.

Making the full 6 GHz band licence exempt allows for more non-overlapping channels, which improves performance and reduces interference and costs. Less interference means lower power consumption. Therefore, making the full 6 GHz band available for licence-exempt use is an energy-efficient approach.

With only the lower 500 MHz available for Wi-Fi, there will not be enough 80 MHz channels in the 6 GHz band to enable deployments of dense networks that require at least 7 non-overlapping channels and up to 15 in high density venues, such as transport hubs and sport stadiums. As a result, many dense Wi-Fi network deployments

utilising the 6 GHz band will still have to use 40 MHz or 20 MHz channels, resulting in little performance improvement over older generations of Wi-Fi technology.

A lack of wider channels for Wi-Fi would have a detrimental impact on real-time video services and high-bandwidth immersive services, such as AR and VR. Such services are used by both consumers (e.g. for entertainment and education) and by enterprises (e.g. for training, healthcare imaging, design, modelling, simulations and support for field maintenance).

For enterprise applications (such as large public venues, healthcare, education, hospitality, logistics, and manufacturing), the large number of available channels and wide range of channel widths (from 20 MHz to 320 MHz) enable performance enhancements and the realisation of new services and architectures. Examples include multi-layer operation, service segmentation and prioritisation, context-aware wireless networks, and hyper-aware access points.

With access to 320 MHz channels, Wi-Fi location-based services can offer sub-1 meter positioning accuracy, which will allow for innovative new use cases such as micro-targeting for retail and warehouse asset tracking. According to ABI Research, real-time location services implementations are set to grow by almost 15% a year between 2021 and 2030².

International competitiveness

In some countries, including the U.S. and Canada, there is almost twice as much licence-exempt spectrum available as in the UK – an additional 125 MHz available in the 5 GHz band (5725-5850 MHz) and an additional 700 MHz available in the 6 GHz band (6425-7125 MHz).

In the US, 28% of Wi-Fi traffic was estimated to be carried by Wi-Fi 6E devices in 2023, according to an analysis of Ookla data by Telecoms Advisory Services (TAS)³. In 2025, TAS envisions 66% of Wi-Fi traffic will be carried by either Wi-Fi 6E or Wi-Fi 7, highlighting the fast-growing availability of the licence-exempt 6 GHz band in North America.

While most countries in Europe are opening up the lower 6 GHz band (5925-6425 MHz), that won't be sufficient spectrum to meet the fast-rising demand for indoor wireless connectivity. It is important to guarantee meaningful indoor Wi-Fi access in the upper 6 GHz band everywhere so enterprises and individuals can rely on the technology when they need it for important use cases, such as automation, video calls and extended reality applications.

Delaying the decision to make the upper 6 GHz band licence-exempt could reduce investment in UK digital infrastructure and hinder innovation in sectors like healthcare, education, and manufacturing, where reliable indoor connectivity is critical.

Conclusions and recommendations

The undersigned companies, with expertise spanning both mobile and Wi-Fi technologies, wish to emphasise the importance of maximising benefits for UK citizens and businesses.

We urge Ofcom to avoid any policy that would increase the complexity of end-user devices (such as laptops, tablets, mobile phones, smart TVs, etc.), which need to be as affordable as possible to maximise uptake. As explained in this response, we believe the UK would see substantial benefits from making the upper 6 GHz band available for use by Wi-Fi indoors and at very low power.

We are committed to supporting Ofcom in its efforts to enhance Wi-Fi connectivity for UK citizens and businesses. By enabling timely access to the upper 6 GHz band, the UK can foster innovation, improve digital infrastructure, and unlock substantial economic and societal benefits.