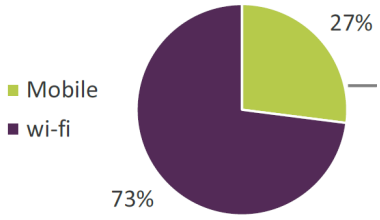
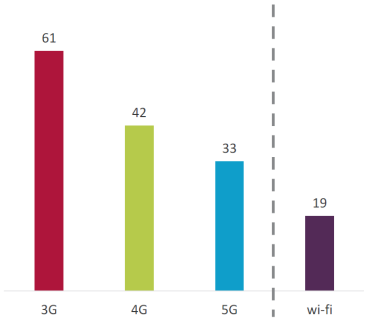
Your response

Question	Wi-Fi Alliance Response
Do you have any comments on our proposals?	Yes, please see responses to specific items as presented in Annex 2- Project Work for 2022/2023
Mobile strategy Publication – Q3 2033/23	Confidential? – N Wi-Fi Alliance congratulates Ofcom on being the first European allowed expand Wi-Fi operations in the 6 GHz band. In adopting this decision, Ofcom judiciously recognized that, over the last two decades, Wi-Fi has evolved from a nascent technology to a critical component of the UK's wireless infrastructure. Unfortunately, this incredible transformation of Wi-Fi functionality has not been met by a corresponding increase in access to spectrum capacity. Even the 500 MHz (5925-6425 MHz) increase, while significant and much needed, does not offer sufficient bandwidth to support the ever-increasing demand for Wi-Fi. Notably, Ofcom's own projections indicate that Wi-Fi "demand could grow between six and ten times over ten years" (see Ofcom Improving Spectrum Access for Wi-Fi, July 2020, at paragraph 3.24). In this report, Ofcom astutely recognized that Wi-Fi has become increasingly important in connecting people and devices everywhere and that 6 GHz spectrum is critical for futureproofing of Wi-Fi connectivity. And the key findings of Ofcom's 2021 Mobile Matters Report indicate that: • "Seventy-three per cent of data connections were made over wi-fi rather than a cellular network, with no significant differences by rurality or nation.:" and "Nearly three-quarters of data connections were made over wi-fi rather than a mobile network (2G, 3G, 4G or 5G) during the research period."  **Average network share by technology, Jan – March 2021** (See report Ofcom's 2021 Mobile Matters Report, Fig. 1) • Over 2/3 of the time, mobile devices were connected to Wi-Fi rather than to a cellular network." (page 5) • Wi-Fi Response times were half of 4G connections with no significant difference by rurality (page 16) (lower is better)

	 **Average response time by network technology in milliseconds: Jan – March 2021 (lower is better)** (See report Ofcom's 2021 Mobile Matters Report, Fig. 16) The future of the Internet is more: more data traffic, more devices, more services and more applications and Wi-Fi technology. will be at the centre of this growth. But Ofcom must ensure sufficient spectrum capacity to support this increasing demand and growth. Countries around the globe are expanding Wi-Fi access beyond 6425 MHz, to the entire 5925-7125 MHz band (e.g., Brazil, Canada, Chile, Japan, Mexico, Saudi Arabia, South Korea, US). Importantly, extensive studies demonstrated that Wi-Fi can operate in the 6425-7125 MHz band on non-exclusive, non-interference and unprotected basis without disrupting incumbent services under similar regulatory conditions that were already adopted by Ofcom in the 5925-6425 MHz band And efforts are underway in the European Electronic Communications Committee to consider RLAN operations in the 6425-7125 MHz band under the newly adopted Work Item. In light of the above, Wi-Fi Alliance respectfully asks Ofcom to include consideration of expanding license-exempt (i.e., Wi-Fi) access to 6425-7125 MHz band in the 2022/23 Workplan.
Database approach to spectrum management. Consultation -Q3 2022/23	Wi-Fi Alliance supports introduction of innovative approaches to spectrum management, including databases, but these approaches, to the greatest extent possible, should be harmonized internationally and balanced noting the complexity in the design and implementation. A light licensing regime using a database solution is an effective spectrum management technique but only in specific frequency bands and use cases. For example , Wi-Fi Alliance enthusiastically supports light-licensing regime for higher-power (i.e., "standard-power") license-exempt operations in the 5925-7125 MHz ("6 GHz band") under the control of databases to manage spectrum access by identifying permissible frequencies at a given geographic location. The database approach, however, would not be technically or commercially feasible for license-exempt operations at lower power (e.g., low-power-indoor or very-low-power) or in other frequency bands.

	Ofcom may wish to note that entities have already demonstrated feasibility of spectrum access under database control including prototypes of the 6 GHz Automated Frequency Control (AFC) system. And the U.S. Federal Communication Commission initiated the AFC operator approval and AFC system certification processes.
Mobile Spectrum Demand Publication - Q3 2022/23	This Consultation comes at a pivotal time in the development Wi-Fi ecosystem. Last year, Wi-Fi Alliance introduced new Wi-Fi 6E terminology to distinguish the latest generation Wi-Fi 6 devices that are capable of 6 GHz operation. Wi-Fi 6E brings a common industry name for Wi-Fi users to identify devices that offer the features and capabilities of Wi-Fi 6 – including higher performance, lower latency, and faster data rates – extended into the 5925–7125 MHz band. Wi-Fi 6E devices are quickly becoming available, following regulatory approvals in several countries. As the 6 GHz regulatory landscape evolves, Wi-Fi Alliance member companies will expand the Wi-Fi 6E ecosystem even further. Initial deployments in the band include Wi-Fi 6E consumer access points and smartphones, followed by enterprise-grade access points. Industrial environments are also expected to see strong adoption of Wi-Fi 6E to deliver applications including machine analytics, remote maintenance, or virtual employee training (see Wi-Fi Alliance 2022 Wi-Fi trends). Wi-Fi 6E will utilize 6 GHz to deliver much anticipated AR/VR use cases for consumer, enterprise, and industrial environments. The list of Wi-Fi 6E certified products is already growing. In 2021, over 300 million Wi-Fi 6E devices entered the market and over 350 million devices are expected in 2022. Regulatory harmonization in the 5925–7125 MHz band will create economies of scope and scale and produce a robust equipment market, benefitting UK businesses, consumers, and the economy. But these benefits cannot be realized in the absence of adequate spectrum capacity. Access to less than the entire 5925-7125 MHz band (1200 MHz) for license-exempt use would substantively reduce Wi-Fi 6E performance in terms of latency and data throughput. The 5925-6425 MHz band (500 MHz) does not provide sufficient spectrum to support future Wi--Fi connectivity. And there are no alternative frequency bands that may address expanding Wi-Fi spectrum requirements in the future. In fact, the next generation of Wi-Fi (Wi-Fi 7) will be designed to support VR/AR/XR, Industrial IoT, automotive, telepresence, immersive 3-D and other applications that require higher data rates, stringent latency, reliability and QoS. Wi-Fi 7 optimal performance will depend on access to multiple wider (e.g., 320 MHz) channels – without spectrum access, consumers will not realize full benefits of Wi-Fi 7 and future generations of Wi-Fi technologies In the assessment of the Mobile Spectrum Demand, Wi-Fi Alliance respectfully asks Ofcom to take into account of that the 5925-7125 MHz band is uniquely suited to accommodate the urgent need for additional Wi-Fi spectrum access (also see response to "**Mobile Strategy Publication"** above).

International engagement Consultation Q1 2022/23 Statement Q3 2022/23	Wi-Fi Alliance respectfully asks Ofcom to consider that even if the next World Radiocommunication Conference (WRC-23) designates 6425-7125 MHz band for IMT in some countries, significant time (i.e., years) and investments (i.e., billions of pounds) will be required to develop, implement, and deploy commercial broadband networks in the 6 GHz band. Moreover, it is far from certain that such IMT networks can be economically sustainable given limited market scale and harmonization. In the meantime, the latest Wi-Fi technology (Wi-Fi 6E) operating in the 5.925-7.125 GHz band, already on the market, empowering tremendous connectivity benefits. Wi-Fi Alliance member companies are delivering a wave of new Wi-Fi 6E products and services. And the connections provided by Wi-Fi technology through low-cost, license-exempt devices can provide billions of pounds in economic value to the UK's economy. Indeed, a recent study by Telecom Advisory Services found that license-exempt Wi-Fi networks delivered over £70 billion pounds of economic benefits to the UK's economy.
Upper 6 GHz band Statement - Q1 2022/23	Wireless connectivity is becoming increasingly integrated into the lives of the UK consumers and business. Appropriately, Ofcom seeks to ensure that everyone in the UK has access to high-quality, affordable and ubiquitously available connectivity. Allowing licensed operations in the 6425-7070 MHz band, however, will not achieve this objective. First, no International Standards Organization has initiated development of a licensed technology standard for the 6 GHz band, including 3GPP. Development of such standards is a multi-year process. Second, multiple technical analyses conducted in UK, Europe and US and the subsequent Ofcom decision to authorize license-exempt operations in the lower-6 GHz band (5925-6425 MHz) confirm the regulatory conditions that are necessary for the mobile networks coexistence with 6 GHz incumbents. These conditions are acceptable for license-exempt networks (e.g., Wi-Fi) but are not feasible for *commercially viable* licensed deployments because, to maintain the necessary quality of service, licensed networks require priority access to spectrum. With priority spectrum access, licensed networks cannot avoid interfering with or tolerate interference from the incumbent operations in the 6425-7125 MHz band. Conversely, Wi-Fi, built on IEEE 802.11 standards, has demonstrated ability to coexist with and protect other spectrum users. These protections are inherent to Wi-Fi technology and are critical to its efficient operations on license-exempt basis worldwide. And Wi-Fi industry is committed to implementing technical, operational, and regulatory solutions that ensure coexistence with other operations in the 5925-7125 MHz band.

	Wi-Fi Alliance understands Ofcom plans to defer consideration of the 6425-7125 MHz to a later date but encourages Ofcom to consider these points.

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