Your response

Question	Your response
Question 1: Do you agree with our proposals to add the 6425-7070 MHz band to the Shared Access framework?	techUK is pleased to provide its views on Ofcom's proposals for authorisation of the upper 6 GHz band to facilitate use cases such as indoor industrial Wi-Fi. The proposal to add the U6GHz band to Ofcom's spectrum sharing framework is not something that techUK had previously requested or even considered. Members have previously only expressed interest[1] in either licensed use of the U6 GHz band for mobile networks or of licence-exempt use by Wi-Fi (and/or other technologies). There are predominantly two preferences among our members, with some advocating for licence-exempt access for WAS/RLAN in both the lower and upper 6 GHz, while some others generally accept a licence-exempt approach for WAS/RLAN in the lower 6 GHz in Europe but advocate for a licensed approach for use of mobile networks in the U6GHz. techUK notes that the studies of the conditions for possible licence-exempt use of the U6GHz band have commenced in CEPT; while at the same time, studies are ongoing in CEPT and ITU in preparation for the Agenda Item 1.2 of the forthcoming World Radiocommunication Conference. This Agenda Item addresses the possible IMT identification of 6425-7125 MHz and 7025-7125 MHz in Region 1 and globally, respectively. techUK notes that the U6 GHz band could be authorised in a number of ways, including national licences, local licences (Ofcom's proposal) or licence-exempt. techUK considers that the economic benefits[2] generated from use of U6 GHz need to be carefully considered before deciding whether the spectrum should be dedicated to national licences, local licences or licence-exempt spectrum use, given that the increase in GDP from enabling new technologies, applications and services is significant. Wi-Fi has become a key complementary technology for telecommunications networks and an essential part of enterprise and home networks, and this value is only expected to raise when next

[1] techUK, Industry views on the potential use of 6 GHz (5925-7125 MHz for licensed and licence-exempt systems, 2021 - https://www.techuk.org/resource/industry-views-on-the-potential-use-of-6-ghz-for-licensed-and-licence-exempt-systems.html

[2] techUK, Industry views on the potential use of 6 GHz (5925-7125 MHz for licensed and licence-exempt systems, 2021 - https://www.techuk.org/resource/industry-views-on-the-potential-use-of-6-ghz-for-licensed-and-licence-exempt-systems.html

generation products and deployments become available. In 2018, Wi-Fi economic value was nearly $2 trillion, and is expected to grow to almost $4.9 trillion by 2025.[3] In the UK, more than 95% of data traffic is transferred over fixed networks[4], with Wi-Fi accounting for most of this traffic.

In a similar vein, mobile technologies and services generated 5% of global GDP in 2021[5], a contribution that amounted to $4.5 trillion of economic value added. By 2025, mobile's contribution is expected to grow by more than $400 billion (approaching $5 trillion), as countries around the world increasingly benefit from the improvements in productivity and efficiency brought about by the increased take-up of mobile services.

Notwithstanding Ofcom's comments that adding the U6GHz band to the shared access licensing framework would not preclude later use for licensed mobile 5G or licence-exempt, some members are not in agreement that Ofcom should proceed with its current proposals.

We provide comments in response to Ofcom's consultation questions below.

Question 1:

techUK members have raised reservations about the proposals. Members who do not agree with the proposal have a range of views and reasons for this. These include:

- It is unclear why the lightly used L6GHz – available in the UK since 2020 on a licence-exempt basis – cannot be used for the application Ofcom wishes to facilitate, noting that it would also have the benefit of not attracting fees.
- Some members recommend that Ofcom should authorise the U6GHz band for national mobile networks to meet the projected requirement for mid-band spectrum needed to meet the traffic growth in major cities by 2030.[6]
- Other members feel that Ofcom should extend the authorization of licence-exempt Low-Power Indoor (LPI) and Very Low Power (VLP) RLAN/Wi-Fi operation to the U6GHz band to provide UK consumers with affordable broadband connectivity enabled by the growing 6 GHz ecosystem and the resulting economies of scale.

[3] Dynamic Spectrum Alliance, 6 GHz License Exempt: Why the full 1200 MHz and why now? P.14 - http://dynamicspectrumalliance.org/wp-content/uploads/2021/08/6GHz-License-Exempt-Band-Why-1200-MHz-and-Why-Now.pdf

[4] Ofcom, Connected Nations 2021 - https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2021

[5] GSMA, The Mobile Economy 2022, p.31 - https://www.gsma.com/mobileeconomy/wp-content/uploads/2022/02/280222-The-Mobile-Economy-2022.pdf

[6] GSMA, The Socio-Economic Benefits of Mid-Band 5G Services, February 2022 - https://www.gsma.com/spectrum/wp-content/uploads/2022/02/mid-band-5G-spectrum-benefits-1.pdf

- In its proposal, Ofcom names industrial and research applications, such as factory robots and sensors, Augmented Reality (AR), healthcare monitors, wireless medical equipment, and private network connections as targets for licensed shared access. While there may be some specific applications that could benefit from a licensing regime, the best way to support the large majority of the mentioned applications would be with licence-exempt technologies, and specifically Wi-Fi 6E and Wi-Fi 7. In order to use spectrum most efficiently, those applications that would need to operate under a licensed regime could utilise the 3.8-4.2 GHz band which was made available in the UK for use by private and local networks.
- However, local licensing could be a useful means, according to some members, to enable Standard Power RLAN/Wi-Fi deployments in the U6GHz band which could benefit multiple sectors, such as education, hospitality, logistics, and industrial.
- The urgency to decide on the U6GHz use is unclear. The only reason given for the proposed licensing of Wi-Fi use is stated to be in case that use has to later be removed if it is incompatible with a possible later decision to allow mobile networks use. This seems to introduce unnecessary risks and uncertainty if the use could be accommodated in the already available L6GHz band.
- The proposals undermine the preparatory work for WRC-23 Agenda Item 1.2 and Ofcom should first consult on its position for that.
- The demand for the use case Ofcom wants to facilitate via shared access licensing has not been demonstrated.
- The proposed use case and authorisation method does not represent the most economically efficient use of the U6GHz band.
- The sharing potential with other services needs to be studied before conclusions are reached on best use of this band. There is disagreement from some members with Ofcom's assumption that the situation in the U6GHz band is similar to the L6GHz band, noting recent ITU studies. It is also noted that there is only very limited use of a small part of the band by satellites in the UK, which is to be expected as the paired downlink bands are already dedicated to mobile.

Existing shared access licensed spectrum is lightly used: more than doubling the amount of shared access licensed spectrum at mid-band is unjustified and risks denying the spectrum to higher value use cases as well as diluting the fragile ecosystem that is emerging around the 3.8-4.2 GHz band.

Some techUK members are supportive of Ofcom's proposals. In their view, although the long term usage of this spectrum is subject to international agreement and not yet clear, allowing access to this spectrum now may promote innovation in the short to medium-term. Releasing it for licence-exempt use would prevent any subsequent

	licensing, so use of the existing Shared Access licensing regime may be the best approach.
Question 2: Do you have any comments on potential uses for this licence?	The uses of this licence are a subset of what can already be done with licence-exempt L6GHz band. The fee of up to £320 per annum per licence is not compatible with many use cases. techUK members have expressed interest[7] in higher power licensed use of U6GHz for mobile networks use or licence-exempt Wi-Fi use cases. A licensed use would enable higher power use as the control of any potential interference will be handled by the system and the operator/ licensee. Some of the benefits and use cases associated with a licensed IMT use of the upper 6 GHz include the delivery of high-capacity citywide (urban and suburban) macro-cellular mobile communications, enabling Fixed Wireless Access for broadband via IMT technologies, or supporting vertical markets and use cases – such as advanced/automated driving – with increasingly demanding requirements on data rate, reliability and low latency. A licence-exempt authorisation would double the existing available mid-band spectrum for WAS/RLAN. Opening the full 6 GHz band to license-exempt technologies would also bring the UK at par with other major markets in the Americas, the Middle East, and Asia that already designated the 1200 MHz for licence-exempt use. That would enable low-latency multi-gigabit connectivity to better support a number of advanced use cases, while improving legacy networks, backhaul and multi-AP Systems, the quality of services and reliability of services. techUK encourages Ofcom to pause and consult more widely on the different potential use cases for U6GHz band and look at what use will maximise economic and societal benefits. techUK encourages Ofcom to contribute to the international sharing studies and work undertaken in CEPT and ITU respectively, to consider potential internationally harmonised licence-exempt (for RLANs) or licensed (for mobile networks) use of the band.

[7] techUK, Industry views on the potential use of 6 GHz (5925-7125 MHz for licensed and licence-exempt systems, 2021 - https://www.techuk.org/resource/industry-views-on-the-potential-use-of-6-ghz-for-licensed-and-licence-exempt-systems.html

Question 3: Do you have any comments on our proposed licence conditions, licence fee or minimum separation distance?	techUK has no comments on the licence technical conditions. techUK recognises that Ofcom must recover its costs of managing the spectrum but notes the proposed licence cost may be prohibitive for consumer use cases. The proposed coordination distance does not prevent interference between licensees as they could still be co-located if at the edge of their own and an adjacent licensee's 50m radius area. That said, if the proposed use were Wi-Fi, separation distances as outlined in the Ofcom proposal might not be required because Wi-Fi technology would be capable of self-coordination and coexistence, although some techUK members see this could be at the expense of reduced quality of service.
Question 4: Do you have any comments on our technical analysis?	No comments.