



**Response to Ofcom's call for input
on UK preparations for the
World Radiocommunication
Conference 2023 (WRC-23)**

September 2022

Introduction to Sky

Sky Group is a leading media and connectivity provider in the UK, Ireland, and Italy, serving more than 23 million customers and employing 35,000 people. We also provide television broadcast services in Germany, and engage software and hardware engineers in Denmark, Poland, and Portugal to support our Customer Premises Equipment (CPE) and television design and manufacturing operations.

Sky's responses

We are grateful for the opportunity to express our views to Ofcom on its preparations for the World Radiocommunication Conference 2023 (WRC-23). We set out below our comments on Ofcom's questions 1, 3c, 6 and 7.

Question 1: Do you agree with the prioritisation of the agenda items, as shown in Annex 5, and if not why?

In general, we support Ofcom's prioritisation of the agenda items. As Ofcom is aware from our previous engagement on the topic, Sky Group strongly supports the need to preserve future opportunities for non-IMT unlicensed technologies in the 6425-7125 MHz range, and this band should not be reserved for mobile use. We also believe that the AI 9.1c (Resolution 175: Use of IMT for FS) should be given a "High" priority for reasons explained in our response to Question 6.

Question 3c: What is your view on the use of 6425-7025 & 7025-7125 MHz, and what evidence do you have to support this view? How does that inform your views on a IMT identification in these bands?

An integral part of Sky's service package consists of high-quality Wi-Fi services that support an ever-increasing range of services, including high-definition video (such as 4K and 8K) and home teleconferencing.¹ There are already Wi-Fi technologies on the market that can make use of the upper 6 GHz bands, namely WiFi6² and WiFi6E,³ with the next generation Wi-Fi (WiFi7) capable of transmitting on any of the 2.4 GHz, 5 GHz, or 6 GHz bands during the same association, already in the early phases of market deployment.⁴ Sky's customers are increasingly relying on these technologies in their daily lives and Ofcom has itself projected up to ten times higher need for bandwidth due to increased use of services that require high quality Wi-Fi technology.⁵

¹ This was already observed by Ofcom in para. 3.17 of its 2020 statement "Improving spectrum access for Wi-Fi". Available at https://www.ofcom.org.uk/_data/assets/pdf_file/0036/198927/6ghz-statement.pdf

² Wi-Fi Alliance, 16 September 2019, Wi-Fi 6 Certification. <https://www.wi-fi.org/news-events/newsroom/wi-fi-certified-6-delivers-new-wi-fi-era>

³ Wi-Fi Alliance, 7 January 2021, Wi-Fi 6E certification program, <https://www.wi-fi.org/news-events/newsroom/wi-fi-alliance-delivers-wi-fi-6e-certification-program>

⁴ See reports of first-generation IEEE 802.11be chip launches from major vendors at Anandtech, notably from Broadcom (April 2022), Qualcomm and MediaTek (May 2022): <https://www.anandtech.com/tag/wi-fi-7>

⁵ UK Ofcom, July 2020, para 3.24 at https://www.ofcom.org.uk/_data/assets/pdf_file/0036/198927/6ghz-statement.pdf

In the near future, we expect that the development of the video-on-demand market, will continue to increase the connectivity needs of our customers – a development we are supporting with innovative solutions, such as our newly launched Sky Glass television (available for the German, Italian and UK markets), and through our already popular Sky Q platform. With more households containing not just one but several connected devices each requiring high-throughput, low-latency connectivity, we predict a need to provide access to devices designed for unlicensed spectrum in the 6425-7125 MHz range.

With more households containing not just one, but several connected devices each requiring high-throughput, low-latency connectivity, we predict a future need to provide access to devices designed for unlicensed spectrum in the 6425-7125 MHz range. The fact that these technologies are already developed makes us even more keen on not foreclosing their accessibility to our customer base.

In addition, more of our customers are opting for various internet-of-things solutions in their households. For example, devices such as baby-monitors and security systems are popular with residential customers and rely on unlicensed connectivity. Since 2019 we have seen UWB (Ultra-Wideband) technologies that already make use of these bands becoming more frequently integrated in smartphones and we expect to see more customers relying on UWB features including for positioning, location, or digital car keys.

A premature IMT identification of the upper 6 GHz bands will make the bands inaccessible to other technologies. Mobile networks are not currently designed to share spectrum with incumbent or alternative new users in the same bands and rely on licensed access. If an unlicensed regime is not working as planned, it is possible to introduce a licensed regime afterwards – however, the reverse is not true. It is extremely hard, once spectrum has been licensed to mobile operators, to then enable unlicensed use in the same band.

Question 6: Do you agree that a formal modification to the radio regulations is not needed for fixed service applications that use IMT Technologies?

We agree that no formal modifications to the radio regulations are required and, bearing in mind the tactics of the coalition that brought about the action item at WRC-19, we believe Ofcom's approach in opposing such a change should be pro-active and collaborative. In the event that the regulations are changed, the interests of broadcasters across Europe could be damaged by a gradual incursion of IMT technologies into the fixed services bands and we are concerned about the coexistence issues that this would bring.

Question 7: What are your views on the proposed approach for 470-694 MHz, recognising the national decisions already in place and taken for DTT multiplex licensing in the band, and the additional and supplementary spectrum made available for UK PMSE usage?

We believe demand and efficient use of spectrum in all bands should be kept under review in accordance with Ofcom's duties. However, current evidence appears to support Ofcom's proposed approach.

Furthermore, we urge Ofcom to undertake work to identify alternative spectrum for PMSE operations in the event that the 470-694 MHz spectrum is ever reassigned to technologies that are not conducive to sharing, such as IMT. The supplementary "airband" spectrum alluded to by Ofcom will not be sufficient to meet the needs of UK users on its own.