

Re: Consultation “Request for comments on Japan’s positions on the 2023 World Radiocommunication Conference (WRC-23)”

Dear Japan MIC,

IEEE 802 LAN/MAN Standards Committee (LMSC) thanks Japan Ministry of Internal Affairs and Communications (MIC) for issuing the consultation “Request for comments on Japan’s positions on the 2023 World Radiocommunication Conference (WRC-23)” and for the opportunity to provide feedback on this topic.

IEEE 802 LMSC is a leading consensus-based industry standards body, producing standards for wireless networking devices, including wireless local area networks (“WLANs”), wireless specialty networks (“WSNs”), wireless metropolitan area networks (“Wireless MANs”), and wireless regional area networks (“WRANs”). We also produce standards for wired Ethernet networks, and technologies produced by implementers of our standards are critical for all networked applications today.

IEEE 802 LMSC is a committee of the IEEE Standards Association and Technical Activities, two of the Major Organizational Units of the Institute of Electrical and Electronics Engineers (IEEE). IEEE has about 400,000 members in over 160 countries. IEEE’s core purpose is to foster technological innovation and excellence for the benefit of humanity. 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 whole¹.

Please find below the responses of IEEE 802 LMSC to WRC-23 agenda items 1.2 and 10.

WRC-23 agenda item 1.2 on 6425-7025 MHz and 7025-7125 MHz:

While the 6425-7025 MHz and 7025-7125 MHz bands are not currently allowed for use by IEEE 802 LMSC technologies within Japan, such use is permitted in many other regions of the world including the US and Europe. The IEEE 802 LMSC believes that the Radio Regulations should retain the current status (“No Change”) of the 6425-7025 MHz and 7025-7125 MHz bands, and not adopt an IMT identification in these bands. There are currently IEEE 802 LMSC technologies used in these bands that are widely deployed in high value applications. The “No Change” position does not prevent participating decision makers from making an identification at a later time, should it prove necessary. However, identifying the bands for IMT too early limits the options for these bands.

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.

IEEE 802.11-based devices operating in the 6 GHz band

The IEEE Std 802.11ax-2021 [1] standard supports operation in the 6425-7025 MHz and 7025-7125 MHz bands, and products based on this standard are seeing significant adoption where regulatory rules permit deployment [2]. IEEE 802 technologies are designed not to cause interference with other users in these bands. The Wi-Fi industry is taking the lead in specifying a number of co-existence strategies for bands with incumbent users, such as automated frequency coordination [3]. A new generation of IEEE 802.11 technologies, currently under development in the IEEE P802.11be amendment, will continue to enhance and improve spectrum co-existence capacities. Prior research from the ECC [4] indicates that access to larger, contiguous bandwidths in the 6 GHz band reduces the potential for harmful interference.

Significant economic value is provided by IEEE 802.11 based systems today [5]. Availability of the full 6 GHz band (i.e., 5925-7125 MHz) for unlicensed use enables deployment of new applications and services in the coming years, further increasing the societal benefits. The very recent analysis from the UK Ofcom highlights such benefits arising from a “No Change” position [6].

IEEE 802.15-based devices operating in the 6 GHz band

IEEE 802.15 standards specify Ultra-Wideband technology operation, which is finding adoption for numerous short-range sensing and ranging applications. IEEE Std 802.15.4-2020 [7] and IEEE Std 802.15.4z-2020 [8] are standards for precision ranging that are already capable of using both the 6425-7025 MHz and 7025-7125 MHz bands and are increasingly used in many high value applications. IEEE Std 802.15.6-2012 [9], a standard for short range, wireless communication in the vicinity of, or inside, a human body (but not limited to humans) uses the same bands and channels and is approved by national medical and/or regulatory authorities for applications including medical wireless body area network (BAN).

It is expected that an increasing number of IEEE 802.15.4-2020, IEEE 802.15.4z-2020, and IEEE 802.15.6 devices will continue to be operated in these bands. Notably, with the increasing use of IEEE 802.15 devices in the smartphone and consumer automotive spaces, it is forecasted that more than 1 billion UWB-enabled devices will be shipped annually worldwide by 2025 [10].

WRC-23 agenda item 10 on the provisional agenda item 2.1 of WRC-27:

IEEE Std 802.15.3d-2017 [11] specifies operation in the 252-321 GHz frequency band for wireless communication. Currently, IEEE 802 LMSC is working on the revision of IEEE Std 802.15.3-2016 to support 275-450 GHz. Radiolocation service in the 275-450 GHz frequency bands may complement communications applications, especially in the context of joint communication and sensing. IEEE 802 LMSC does not support the allocation of frequency bands between 252 and 275 GHz for radiolocation service for primary use and instead suggests to consider an allocation for co-primary use at these frequency bands as suggested in Resolution 663 (WRC-19).

Conclusion

IEEE 802 LMSC thanks the Japan MIC for the opportunity to provide this submission and kindly requests Japan MIC to take into account our responses in its decision towards WRC-23.

Respectfully submitted

By: /ss/.

Paul Nikolich

IEEE 802 LAN/MAN Standards Committee Chairman

em: p.nikolich@ieee.org

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