IEEE P802.18  
Radio Regulatory Technical Advisory Group (RR-TAG)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Proposed Response to Japan’s Ministry of Internal Affairs and Communications for Frequency Realignment Action Plan (2023 Edition) | | | | |
| Date: 2023-10-11 | | | | |
| Author(s): | | | | |
| Name | Company | Address | Phone | email |
| Hassan Yaghoobi | Intel Corp. |  |  | [hassan.yaghoobi@intel.com](mailto:hassan.yaghoobi@intel.com) |

This document drafts a proposed response to the Japan MIC’s consultation “Frequency Realignment Action Plan **(**2023 Edition**)**”.

**Notice:** This document has been prepared to assist IEEE 802.18. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.

Electronic filing November 02, 2023

Re: Consultation “Frequency Realignment Action Plan (2020 Edition)”

Dear Telecommunications Bureau,

IEEE 802 LAN/MAN Standards Committee (LMSC) thanks Japan’s Ministry of Internal Affairs and Communications (MIC) for issuing the consultation that call for comments on “Frequency Realignment Action Plan (2023 Edition)” and for the opportunity to provide feedback.

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 whole[[1]](#footnote-1).

IEEE 802 LMSC follows Japan’s regulatory activities regarding radio local area network (RLAN) and supports MIC proceedings on enabling Standard Power (SP) using automatic frequency control (AFC) for spectrum sharing with fixed communication systems operated in 5925 MHz to 7125 MHz and authorizing 6425 MHz to 7125 MHz for very low power (VLP) and low power indoor (LPI) modes of operation.

IEEE 802 LMSC applauds and appreciate MIC’s progress in finalizing technical conditions on Client-to-Client (C2C) communications as well as the coverage for 320 MHz channel bandwidth in the 6 GHz band published in September 2023. In particular, IEEE 802 LMSC recognizes MIC taking the global leadership in finalizing detailed technical specifications for C2C. As we stated in our filing in August 2023 [Reference TBD], C2C is critical to efficiency of spectrum utilization and enabling a diverse set of different Wi-Fi applications, use-cases and industry segments and business models in the 6 GHz band across the globe.

Please find below the IEEE 802 LMSC’s specific comments on this consultation focusing on the aspect of the consultation related to the 6 GHz band (i.e., 5925 MHz to 7125 MHz).

**Target for Securing +1GHz of License Exempt Spectrum for Wi-Fi by the End of 2025**

IEEE 802 LMSC applauds MIC progressive approach in committing to allocation of +1GHz of License Exempt spectrum for Wi-Fi to enable 10 Gbps services by utilizing IEEE 802 standards based Wi-Fi 6 and Wi-Fi 7 wireless LAN technologies in the 6 GHz band.

MIC commitment to allocation of +1GHz of license exempt spectrum for Wi-Fi makes Japan along with US global champions for low-cost wireless connectivity.

**6 GHz as a Priority Initiative**

IEEE 802 LMSC appreciates MIC in listing of the 6 GHz regulatory expansion as a priority initiative for Frequency Realignment Action Plan.

IEEE 802 LMSC recognizes MIC’s determination in introduction and enablement of Wi-Fi 7 technology based on IEEE 802.11be [1] and spectrum sharing for Standard Power operation using sharing mechanism such as Automated Frequency Coordination (AFC) to improve system coverage and system throughput performance.

These two features heavily rely on the availability of sufficient spectrum (+1GHz) to accommodate multiple 160 MHz and 320 MHz channels. In the case of Wi-Fi 7 and IEEE 802.11be, enterprise deployments and also scaled deployment of advanced applications such as AR/VR for example in education and health require multiple 320 MHz channels to fully utilize the advantages of the technology. In the case of Standard Power under supervision of AFC System, without extending the band to upper 6 GHz band, and with only 500 MHz of spectrum available, considering limited spectrum availability from an AFC System, the channel bandwidth may be limited to 20 MHz for enterprise indoor and outdoor deployments. Please note that even with additional shared spectrum in the upper 6GHz authorized, because of the AFC system frequency availability calculation, only a part of the spectrum will be accessible at each location.

Today, AFC technology is mature, and AFC Systems are going through detailed certification processes in US and Canada and Standard Power deployments are imminent. On the other side, it is a while that various chipset vendors and original equipment manufacturers (OEMs) have been demonstrating and promoting their Wi-Fi 7 products, some of which have already emerged in the market, meanwhile, Wi-Fi certification launch is expected soon. IEEE 802 LMSC respectfully encourages MIC to finalize expansion of the 6 GHz band to 6425-7125 MHz, including outdoor use of wireless LAN.

**7025-7125MHz Band**

With regards to MIC consideration of 7025-7125 MHz band as related to WRC-2023, IEEE 802 LMSC recommends allocation of the band to license exempt operation. Full allocation of the 6 GHz band (5925-7125 MHz) will enable Wi-Fi utilization of 7x160MHz channels for indoor enterprise deployment with reuse pattern 7. In the case that the last 100MHz is not available to Wi-Fi, such reuse pattern is not feasible in deployments. With MIC continued sharing studies for outdoor operation at 6425 MHz to 6570 MHz and 6870 MHz to 7125 MHz (to accommodate presence of Field Pick-up Unit (FPU) and Broadcast Mobile Services incumbent operation in the band), we understand operation of IMT outdoor will be even more challenging than that of Wi-Fi due to higher power transmission.

**Conclusion**

IEEE 802 LMSC supports MIC renewed commitment to allocation of 1GHz of license exempt spectrum and prioritization of expansion of 6 GHz regulations enabling Standard Power (SP) using AFC for spectrum sharing with fixed communication systems operated in 5925 MHz to 7125 MHz and authorizing 6425 MHz to 7125 MHz for very low power (VLP) and low power indoor (LPI) modes of operation. We hope that the new regulation will be enacted in a timely manner. We respectfully request Japan's MIC to consider our comments listed in this response.

Respectfully submitted

By: /ss/.

Paul Nikolich

IEEE 802 LAN/MAN Standards Committee Chairman

em: [p.nikolich@ieee.org](mailto:p.nikolich@ieee.org)

References:

[1] IEEE Draft Standard for Information technology--Telecommunications and information exchange between systems Local and metropolitan area networks--Specific requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications Amendment: Enhancements for Extremely High Throughput (EHT)," in IEEE P802.11be/D4.1, September 2023 \.

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. [↑](#footnote-ref-1)