

Re: Consultation “Planning options in the upper 6 GHz band”

Dear Manager of Spectrum Licensing Policy Section,

IEEE 802 LAN/MAN Standards Committee (LMSC) thanks the Australian Communications and Media Authority (ACMA) for issuing the consultation “Planning options in the upper 6 GHz band” and for the opportunity to provide feedback on this important topic.

IEEE 802 LAN/MAN Standards Committee (IEEE 802 LMSC) is a leading consensus-based open standards development committee for networking standards that are used by industry globally. It produces standards for networking devices, including wired and wireless local area networks (“LANs” and “WLANs”), wireless specialty networks (“WSNs”), wireless metropolitan area networks (“Wireless MANs”), and wireless regional area networks (“WRANs”). Technologies produced by implementers of our standards are a critical element for all networked applications today.

IEEE 802 LMSC is a committee of the IEEE Standards Association and of Technical Activities, two of the Major Organizational Units of the IEEE. IEEE has about 400,000 members in over 160 countries and its core purpose is to foster technological innovation and excellence for the benefit of humanity. IEEE is also a major accredited standards development organization whose standards are recognized worldwide. 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 this consultation.

1. What are your views on the 4 broad planning options identified for the upper 6 GHz band?

➤ ***Option 1: Maintain existing arrangements, with potential reconsideration at a later date.***

IEEE 802 LMSC has commented on maturity of Wi-Fi ecosystem and product availability in its responses to ACMA’s previous consultations on the 6 GHz band and Five-Year Spectrum Outlook². IEEE 802 LMSC believes that there is a serious risk associated with the opportunity cost for any alternative approach and delay in a decision on authorization of the upper 6 GHz band to Wi-Fi.

With Wi-Fi 7 products already in the market, Wi-Fi deployments are going through a second-generation upgrade in the entire 6 GHz band globally³ and there are no good reasons to defer a decision on the upper 6 GHz band. IEEE 802 LMSC recognizes and

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.

² See IEEE 802 LAN/MAN Standards Committee’s response to the consultations “New arrangements for low interference potential devices - consultation 35/2022” (December 2022), “Five-year spectrum outlook 2023–28 and 2023–24 work program Draft for consultation” (April 2023), and “Five-year spectrum outlook 2024–29 and 2024–25 work program, Draft for consultation” (May 2024).

³ See Wi-Fi Alliance: Wi-Fi 7 market momentum: Wi-Fi 7 is here – is your network ready?, <https://www.wi-fi.org/beacon/chris-hinsz/wi-fi-7-market-momentum-wi-fi-7-is-here-is-your-network-ready> [accessed: 14 July 2024].

appreciates ACMA's statement that Option 2 could be implemented using a routine update to the LIPD class licence, allowing a near-term rollout of RLAN devices.

IEEE 802 LMSC recommends that ACMA proceeds with a decision in favor of allocation of the entire upper 6 GHz band (i.e., 6425 MHz to 7125 MHz) as LIPD Class Licence in third quarter of 2024.

- ***Option 2: Introduce arrangements to enable RLAN access to some or all of the upper 6 GHz band, via a variation to the LIPD Class Licence. There would be no arrangements introduced for WA WBB.***

IEEE 802 LMSC supports Option 2.

IEEE 802 LMSC already provided its reasoning and opinion in support of allocation of the entire 6 GHz band, including the entire upper 6 GHz band for LIPD Class License in our responses to previous consultations. More specifically, IEEE 802 LMSC commented on Wi-Fi significant contribution to societal and economic value and sustainability value to Australia.

In addition, IEEE 802 LMSC respectfully commented on the need for sufficient spectrum allocation in the 6 GHz band to support ever increasing demand for Wi-Fi services and support for multiple 160 MHz and 320 MHz channels. The current allocation of 500 MHz in the lower 6 GHz band is not sufficient to enable advanced applications and use cases, at the same time to scale them for multiple simultaneous sessions for dense, commercial, industrial, and educational deployments.

- ***Option 3: Introduce arrangements to enable WA WBB access to some or all of the upper 6 GHz band, under apparatus and/or spectrum licensing. There would be no arrangements introduced for RLANs.***

Consistent with the statement in support of Option 2, IEEE 802 LMSC does not support Option 3.

- ***Option 4: Introduce arrangements to enable both RLAN and WA WBB access to different frequency segments within the upper 6 GHz band, using the respective authorisation arrangements in options 2 and 3.***

Considering the objective of the Radiocommunications Act 1992 as a guideline for desirable planning outcomes for an optimum use of the upper 6 GHz band, IEEE 802 LMSC agrees with ACMA's assessment that under non-traditional sharing models, "relative value of the spectrum offering to a prospective licensee might be eroded" and "high level of uncertainty can materially affect spectrum value". Overall, this results in a profound inefficiency in spectrum utilization and is inconsistent with the objective of the Radiocommunications Act 1992 for optimum spectrum utilization.

IEEE 802 LMSC believes that a traditional sharing model, which is based on band split, also suffers from the same phenomena and has its own technical challenges that result in suboptimum utilization of the band when potentially unsynchronized incompatible technologies coexist in adjacent sub-bands.

In addition, as deployment of WA WBB in the 6 GHz band is expected to be primarily in metropolitan areas, there is an inefficiency in spectrum utilization with detrimental impact to overall economic benefits of the portion of the band that is not used for RLAN.

IEEE 802 LMSC understands that an important component of desirable planning outcomes based on the Radiocommunications Act 1992 is a solution that supports coexistence with existing services in the band. As referred to the results of many sharing studies in US, EU, Canada, and other regions, it is already demonstrated that not only the sharing of Wi-Fi with existing incumbent services, including Fixed Point-to-Point, Television Outside Broadcast (TOB) Services, and Satellite Services, is feasible, but also, when coexisting with RLAN, incumbent services, such as Fixed Services and TOB Services can expand without any risk of harmful interference to their operation. Conversely, as rightly stated by ACMA, any options that involve a partial or full allocation of the band to WA WBB services most probably require displacement or modification of existing services that in turn results in long delay in spectrum utilization and additional cost and risk.

For the reason stated above, IEEE 802 LMSC does not support Option 4.

2. If we decide to divide the band into different RLAN and WA WBB segments, should the WA WBB segment:

- a. be a multiple of 100 MHz? This would align with the largest 3GPP channel size (noting that the ability for WA WBB operators to deploy one or more 100 MHz channels will depend on the outcome of the assignment process)***
- b. align with the 160/320 MHz wi-fi channel raster? This would maximise the number of the larger wi-fi channels available (by avoiding options that would split these channels).***

IEEE 802 LMSC supports and recommends allocation of the entire upper 6 GHz band (i.e., 6425 MHz to 7125 MHz) to LIPD Class Licence.

3. Of the segmentation options based on wi-fi channels (options 1–3 in this paper), what is the preferred option and why?

IEEE 802 LMSC supports and recommends allocation of the entire upper 6 GHz band (i.e., 6425 MHz to 7125 MHz) to LIPD Class Licence. By doing so, coexistence with incumbent Fixed Point-to-Point Services and protection of TOB operation is guaranteed and there is no need for TOB services to cease in the 7100 MHz to 7125 MHz frequency range as it is otherwise required with any of the three schemes listed above.

4. Is it appropriate to limit our consideration of hybrid options for accommodating multiple services to frequency segmentation only? For example, should geographic segmentation or less traditional sharing models be considered when determining models for enabling access to the upper 6 GHz band by both WA WBB and RLAN services?

IEEE 802 LMSC does not support Option 4, as stated above.

Initiate authorization proceedings for 'standard' power RLAN under supervision of AFC

IEEE 802 LMSC, in its response to the former consultations, recommended to ACMA to initiate proceedings for authorization of Standard Power (SP) mode under supervision of an Automated Frequency Coordination (AFC) System in the 6 GHz band. IEEE 802 LMSC uses this opportunity to reiterate its recommendation regarding authorization of SP mode and is looking forward to the upcoming consultation on enabling higher-power RLANs.

Conclusion

IEEE 802 LMSC thanks ACMA for the opportunity to provide this submission in support of Option 2. IEEE 802 LMSC also recommends to ACMA to initiate proceedings to authorize Standard Power (SP) mode under supervision of an Automated Frequency Coordination (AFC) System in the 6 GHz band.

Respectfully submitted

By: /ss/.

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IEEE 802 LAN/MAN Standards Committee Chairman

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