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Radio Regulatory Technical Advisory Group (RR-TAG)

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| Proposed Response to ACMA Planning Options in the Upper 6 GHz Band |
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This document drafts a proposed response to the Australia ACMA’s consultation “Planning options in the upper 6 GHz band”.

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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 draft outlook and work program.

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-2).

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 6GHz band and Five-Year Spectrum Outlook consultations. Considering that, 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 upper 6GHz 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 globally[[2]](#footnote-3) and there are no good reasons to defer a decision on the upper 6 GHz band. IEEE 802 LMSC recognize and appreciate 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 6GHz band (6425-7125MHz) 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 already provided its reasoning and opinion in support of allocation of the entire 6GHz band, including the upper band 6425-7125MHz for LIPD Class License. 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 6GHz band to support ever increasing demand for Wi-Fi services and support for multiple 160MHz and 320MHz channels. The allocation of 500MHz 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.

IEEE 802 LMSC supports Option 2.

* ***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 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 object 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 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 Radiocommunication Act based desire for optimum spectrum utilization.

IEEE 802 LMSC believes that a traditional sharing 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 co-exist in adjacent sub-bands.

In addition, as deployment of WA WBB in the 6GHz 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 a desirable planning outcomes based on the Radiocommunications Act 1992 is a solution that supports coexistence with existing services in the band. As the result 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 co-existing with RLAN, incumbent services, such as Fixed Services and TOB 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 6GHz band (6425-7125MHz) 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 6GHz band (6425-7125MHz) to LIPD Class Licence. Considering that, co-existence 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 7100–7125 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 “Five-year Spectrum Outlook 2023–28” and “Five-year Spectrum Outlook 2024–29”, 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 Standard Power (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 recommended 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

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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-2)
2. 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: 18 April 2024]. [↑](#footnote-ref-3)