24 September 2019

To: The Manager

Spectrum Planning and Engineering Branch

Australian Communications and Media Authority

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**Subject:** Comments to ACMA consultation on Spectrum Sharing, Overview and new approaches, IFC:25/2019.

**COMMENTS OF IEEE 802**

1. IEEE 802 LAN/MAN Standards Committee (LMSC) respectfully submits these responses to Australian Communications and Media Authority (ACMA). IEEE 802 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 420,000 members in about 190 countries and supports the needs and interests of engineers and scientists broadly. In submitting this document, IEEE 802 acknowledges and respects that other components of IEEE Organizational Units may have perspectives that differ from, or compete with, those of IEEE 802. Therefore, this submission should not be construed as representing the views of IEEE as a whole[[1]](#footnote-1)
2. 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 appreciate the opportunity to provide these comments to ACMA.

# Comments to the Questions asked

1. Given current momentum in international markets and opportunities for other sharing models offered by 5G technologies, is it timely to develop a more detailed consideration of spectrum sharing opportunities in Australia?

Shortage of spectrum, new applications and advancements in sharing mechanisms make spectrum sharing critical in the era of 5G. IEEE 802 believes that detailed consideration of spectrum sharing mechanisms is critical as related to 5G enablement. Earlier this year[[2]](#footnote-2) in its Comments to ACMA Draft five-year spectrum outlook 2019–23, spectrum management work, IEEE 802 encouraged ACMA to consider Licensed Exempt operation in 6 GHz band in its future proceedings in support of 5G enablement. IEEE 802 is developing further amendments IEEE P802.15.4z and IEEE P802.11ax to existing standards that include the 6 GHz band.

1. Are there recent developments in sharing techniques that industry and the ACMA should be aware of?

In the USA the Federal Communications Commission (FCC) published a Noticed of Proposed Rule Making[[3]](#footnote-3) on the band where the Automated Frequency Coordination (AFC) is proposed as the main mechanism for co-existence with incumbent Fixed Services to avoid interference to the incumbent receivers. The AFC mechanism is proposed for Standard Power RLAN operation. Low power indoor operation is being considered as a possible sharing mechanism without AFC as long as incumbent users are sufficiently protected from interference. These mechanisms could be considered for sharing in the 6 GHz band and other possible allocations as applicable.

1. What are the (potentially new) use cases that might benefit from secondary or tertiary access to spectrum and who benefits?

No comment from IEEE 802.

1. What are the potential challenges/impediments to the introduction of DSA in Australia—technical, industry capability, licensing and regulatory frameworks?

No comment from IEEE 802.

1. Facilitating spectrum access (e.g. monitoring, control, reporting, assignment) logically necessitates involvement from both government and industry. Are there any early thoughts on what an appropriate industry/government balance might look like? How might the ACMA facilitate shared spectrum access? How might the ACMA address this?

An example is Wireless Innovation Forum (WInnForum) a USA-based, international non-profit, multi-stakeholder organization driving technology innovation in commercial, civil, and defense communications around the world. WInnForum members bring a broad base of experience in Software Defined Radio (SDR), Cognitive Radio (CR), and Dynamic Spectrum Access (DSA) technologies in diverse markets and at all levels of the wireless value chain to address emerging wireless communications requirements through enhanced value, reduced total life cost of ownership, and accelerated deployment of standardized families of products, technologies, and services.

1. What is the relevance of DSA examples such as the USA Citizens Broadband Radio Service (CBRS) arrangements to the Australian spectrum environment? Are there other or lower cost alternatives to help inform access control and assignment systems of incumbent usage in a timely manner?

No comment from IEEE 802.

1. Under a multi-tier DSA approach:
   * + Tier 1 (highest priority or incumbent) users would be expected to share spectrum with lower tier users when not being utilised. Are there any specific licensing and/or regulatory arrangements that might incentivise the tier 1 users to release unutilised spectrum for lower-tier access?
     + Tier 2 and 3 users need to vacate spectrum (regardless of their service type or communication urgency) for tier 1 users to operate seamlessly. Do we see potential services/service types in Australia who would fit the criteria of second or third tier users? What are the incentives to adopt a conditional (lower priority) spectrum than an unconditional (full access) spectrum?

No comment from IEEE 802.

# Conclusion

1. IEEE 802 LMSC appreciates ACMA’s consultation and the scarcity of spectrum today. We provide these comments for your review and consideration.

Respectfully submitted

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1. This document solely represents the views of the IEEE 802 LAN/MAN Standards Committee and does not necessarily represent a position of either the IEEE, the IEEE Standards Association or IEEE Technical Activities. [↑](#footnote-ref-1)
2. [IEEE 18-19-0058-07-0000](https://mentor.ieee.org/802.18/dcn/19/18-19-0058-07-0000-acma-5yr-spectrum-outlook-2019-23-ieee-802-comments.pdf), Comments to ACMA Draft five-year spectrum outlook 2019–23, spectrum management work program-consultation draft, IFC: 10/2019, 15 May 2019 [↑](#footnote-ref-2)
3. FCC 18-147, Unlicensed Use of the 6 GHz Band Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz, [ET Docket No. 18-295](https://www.fcc.gov/ecfs/search/filings?proceedings_name=18-295&sort=date_disseminated,DESC), GN Docket No. 17-183, NOTICE OF PROPOSED RULEMAKING, Adopted: October 23, 2018 Released: October 24, 2018 [↑](#footnote-ref-3)