

03 September 2019

To: Independent Communications Authority of South Africa (ICASA)
Bethuel Nkgadime
350 Witch-Hazel Avenue,
Eco Point Office Park,
Eco Park, CENTURION,
Gauteng
Tel: 012 568 3993

Via email: BNkgadime@icasa.org.za

Subject: Comments to ICASA consultation paper on Notice of Intentions to amend annexure B of the radio frequency spectrum regulations, 2015.

COMMENTS OF IEEE 802

1. IEEE 802 LAN/MAN Standards Committee (LMSC) respectfully submits these responses to Independent Communications Authority of South Africa (ICASA). 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 whole¹

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.

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 ICASA.

Comments

3. Harmonize with WRC-19

IEEE 802 appreciates ICASA’s efforts to review their licence-exempt frequency allocations, as it is known that spectrum allocation throughout the world is constantly being reviewed and adjusted keeping up with need and technology updates. With that, the World Radiocommunications Conferences’ (WRC) job every three to four years is to review and if necessary, revise the [Radio Regulations](#), the international treaty governing the use of the radio-frequency spectrum. With WRC-19 being held this year, ICASA may want to delay this consultation until after the conference and results are available. In the meantime, here are some viewpoints of IEEE 802 on a few frequency ranges that ICASA may wish to consider.

4. Sub-1 GHz spectrum

There have been recent decisions IEEE 802 would like to be sure that ICASA is aware of regarding the 863-868 MHz and 917.4-919.4 MHz bands in Europe, which allow data transmission devices (also known as Short Range Devices (SRDs)) to operate in ≤ 1 MHz channels at 25mW ERP with duty cycle requirements. This allows various beneficial IoT related applications, for example in the areas of Smart Cities and Agriculture, to be supported by IEEE 802 wireless technologies such as IEEE Std 802.11 and IEEE Std 802.15.4. To harmonize with European regulations would allow for common equipment and networks to be more readily available and maintainable for South African markets.

Many countries, such as Australia and New Zealand, allow class licensed SRDs across the entire frequency range of 915 – 928 MHz. This flexibility allows products developed for the Americas, where the 902 – 928 MHz frequency range is available for licence-exempt devices, to be easily adapted and made available to the Australian and New Zealand public. For ICASA to open up more licence-exempt spectrum in the 900 MHz band in general, would allow more growth and opportunity for South Africa to develop and deploy more technologies and networks designed for this band globally, which has propagation qualities that allow devices, such as battery powered IoT devices, to cover more geographic area than higher frequencies allow.

5. 5 150 to 5 250 MHz spectrum

Since the 1990s, IEEE 802 has been actively developing standards for wireless LAN technologies that operate in the 5 GHz bands. Among these is IEEE 802.11, which is the basis for Wi-Fi², the most successful, most used and most demanded 5 GHz Radio Local Area Network (RLAN) technology. IEEE 802.11 is carrying the vast majority of wireless Internet traffic and is essential for commercial services, education, communications and social interactions, creating industries and providing jobs and economic growth around the world.

In spite of the growing demand, however, the mid-band spectrum available globally for RLAN access has remained unchanged since World Radiocommunication Conference 2003 (WRC-03). This lack of adequate spectrum threatens to degrade RLAN performance and limit connectivity for billions of consumers worldwide. This problem is particularly acute for RLAN outdoor deployments.

The 5 150-5 250 MHz band offers unique advantages in addressing the growing need for RLAN outdoor access. Recognizing this fact, some administrations have adopted regulations that protect other operations while allowing limited RLAN operations outdoors in the 5 150-5 250 MHz band in coexistence with mobile-satellite-service (MSS) operations through E.I.R.P.

² Wi-Fi Alliance® is a non-profit organization that promotes Wi-Fi® technology and certifies Wi-Fi® products if they conform to certain standards of interoperability. Wi-Fi Alliance® and Wi-Fi® are registered trademarks of the Wi-Fi Alliance.

limitations at higher antenna elevation angles. These rules are intended to prevent harmful interference to MSS Earth-to-space communications by limiting the aggregate noise received by the satellite.

In preparation for WRC-19, Agenda Item 1.16, the Inter-American Telecommunication Commission (CITEL) has adopted an Inter-American Proposal establishing an international regulatory framework based on these regulations that will enable much-needed RLAN outdoor deployments while ensuring protection of other operations in the 5 150-5 250 MHz band.

6. Wireless Access Systems (MGWS) access to mmWave spectrum (57-71 GHz)

While IEEE 802 appreciates ICASA's allocation of the 57-66 GHz band for Multi-Gigabit Wireless Access Systems (MGWS), it is respectfully requesting ICASA to reconsider its position with regards to access to the mmWave spectrum and extend the access to the entire 57-71 GHz band for licence-exempt use. We further request that ICASA consider unlicensed use of the band for indoor and outdoor usages including point-to-point and point-to-multipoint with higher transmit power for outdoors as per the rules detailed in the FCC Report and Order link below. IEEE 802 strongly supports 66-71 GHz band for licence-exempt operation globally. In the following, we are listing a number of actions already taken globally toward unlicensed operation in the entire band.

- On July 14, 2016, U.S. Federal Communication Commission (FCC) published a Report and Order and Further Notice of Proposed Rulemaking (FCC 16-89) [https://apps.fcc.gov/edocs_public/attachmatch/FCC-16-89A1.pdf] to adopt 64-71 GHz band for unlicensed operation.
- In January 2018, the ITU-R published Recommendation M.2003-2 [<https://www.itu.int/rec/R-REC-M.2003-2-201801-I/en>] wherein this band was indicated for Multigigabit Wireless Systems. This facilitates the introduction of IEEE 802 technologies that are capable of supporting 5G use cases under the existing Mobile Allocation.

- In February 2018, the Radio Spectrum Policy Group of the European Union (RSPG) published their Second Opinion on 5G [<http://rspg-spectrum.eu/2018/02/>] in which they recommended making this band available on a general authorized access basis.
- In August 2019, the Australian Communications and Media Authority (ACMA) finalized the [variation to the LIPD Class Licence](#), updated for data communication transmitters and new optional items authorizing outdoor fixed point-to-point links in the 57-71 GHz frequency band to be harmonized with [FCC Rules Title 47 Part 15 Section 255](#) or in the 57.1 to 70.875 GHz frequency band following United Kingdom OFCOM arrangements.

Conclusion

7. IEEE 802 LMSC appreciates ICASA's consultation and the scarcity of spectrum today. We appreciate your review and consideration of the comments above.

Respectfully submitted

By: /s/ Paul Nikolich

Paul Nikolich

IEEE 802 LAN/MAN Standards Committee Chairman

em: IEEE802radioreg@ieee.org