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

Proposed response to South Africa ICASA's consultation on Draft Radio Frequency Migration Plan				
Date: 2024-05-16				
Author(s):				
Name	Company	Address	Phone	email
Edward Au	Huawei			edward.ks.au@gmail.com

This document drafts a proposed response to the South Africa Independent Communications Authority of South Africa (ICASA)'s consultation "Draft Radio Frequency Migration Plan".

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Independent Communications Authority of South Africa
Block C, 350
Witch-Hazel Avenue,
Eco Point Office Park, Centurion

Re: Consultation "Draft Radio Frequency Migration Plan"

Dear Mr. Manyaapelo Richard Makgotlho,

IEEE 802 LAN/MAN Standards Committee (LMSC) thanks the Independent Communications Authority of South Africa (ICASA) for issuing the consultation "Draft Radio Frequency Migration Plan" ("the Migration Plan") 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].

Please find below the responses of IEEE 802 LMSC on Section 4.12.41 of "the Migration Plan".

Wi-Fi provides significant societal and economic value to South Africa

IEEE 802.11 based Wi-Fi technologies brings unique, important and consequential improvements to access and affordability measures as the suitable complement to full-fibre upgrades in South Africa. Indeed, a study by OpenSignal found that South Africa is leading Africa's pace on Wi-Fi connectivity where smartphone users are more likely to connect to Wi-Fi than the mobile-only internet[2]. In addition, significant economic value is provided by Wi-Fi to the South Africa's economies: the economic value reached USD $31.0 billion in 2021, and is expected to increase to USD $44.2 billion by 2025[3].

Wi-Fi access to the 6425 MHz –7125 MHz is needed to support Gigabit connectivity

[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 iTWeb: South Africa sets Africa's pace on WiFi connectivity, https://www.itweb.co.za/article/south-africa-sets-africas-pace-on-wifi-connectivity/dgp45qaBx8wvX9l8 [accessed: 13 May 2024].
[3] See Wi-Fi Alliance: Global economic value of Wi-Fi® to reach $5 trillion in 2025, https://www.wi-fi.org/system/files/Economic_Value_of_Wi-Fi_Highlights_202305.pdf [accessed: 13 May 2024].

In considering further allocation in the 6425 MHz to 7125 MHz frequency band, IEEE 802 LMSC respectfully asks ICASA to consider the following points.

The ITU World Radiocommunications Conference 2023 (WRC-23) explicitly recognized that the 6425 MHz to 7125 MHz frequency band is used for the implementation of wireless access systems (WAS), including radio local area networks (RLANs). Many countries and regions including the USA, Canada, Brazil, South Korea, and Saudi Arabia have already allocated the entire 6 GHz band (i.e., 5925 MHz to 7125 MHz band) for license-exempt operation. Availability of the entire 6 GHz band for license-exempt use will create economies of scale and produce a robust equipment market, benefitting South Africa's businesses, consumers, and economy, while providing significant societal benefits.

In January 2024, Wi-Fi Alliance introduced[4] Wi-Fi CERTIFIED 7™ based on IEEE P802.11be technology[5]. 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[6]. IEEE P802.11be's global 6 GHz channelization is designed to accommodate multiple 160 MHz and 320 MHz channels throughout the 5925 MHz to 7125 MHz band, where available. ICASA's current designation of 500 MHz of the 6 GHz band from 5925 MHz to 6425 MHz for license-exempt operation provides for only one 320 MHz channel, while the 5925 MHz to 7125 MHz band would allow three such channels to support Gigabit connectivity in South Africa.

Conclusion

IEEE 802 LMSC thanks ICASA for the opportunity to provide this submission and respectfully requests ICASA to consider our responses to authorize license-exempt operation in the upper 6 GHz (6425 MHz – 7125MHz) band given the significant societal, economic, and sustainability benefits of Wi-Fi to South Africa.

Respectfully submitted

By: /ss/.
James Gilb
IEEE 802 LAN/MAN Standards Committee Chairman
em: gilb_ieee@tuta.com

[4] See Wi-Fi Alliance: Wi-Fi Alliance® introduces Wi-Fi CERTIFIED 7™, https://www.wi-fi.org/news-events/newsroom/wi-fi-alliance-introduces-wi-fi-certified-7 [accessed: 13 May 2024].

[5] See "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/D5.0, November 2023, vol., no., pp.1-1045, 3 Jan. 2024. With introduction of 320 MHz channel bandwidth, Wi-Fi 7 doubles throughputs relative to Wi-Fi 6E and significantly improves latency for Extended Reality (XR), bringing determinism through enablement of Multi-Link Operation (MLO) over multiple bands in 2.4 GHz, 5 GHz, and 6 GHz bands. Wi-Fi 7 also provides higher efficiency, relative to Wi-Fi 6E, through offering of 4096 QAM. In addition, spectrum puncturing improves flexibility in utilizing spectrally efficient wide channel bandwidth, e.g., 160 MHz and 320 MHz, while protecting incumbent operation in the band.

[6] 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: 13 May 2024].