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

Proposed response to South Africa ICASA’s consultation on Draft Radio Frequency Migration Plan				
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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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5 Electronic filing

May 31, 2024

6
7 Independent Communications Authority of South Africa
8 Block C, 350
9 Witch-Hazel Avenue,
10 Eco Point Office Park, Centurion

11
12 **Re: Consultation “Draft Radio Frequency Migration Plan”**

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14 Dear Mr. Manyapelo Richard Makgotlho,

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16 IEEE 802 LAN/MAN Standards Committee (LMSC) thanks the Independent Communications
17 Authority of South Africa (ICASA) for issuing the consultation “Draft Radio Frequency Migration
18 Plan” (“the Migration Plan”) and for the opportunity to provide feedback on this draft outlook and
19 work program.

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21 IEEE 802 LMSC is a leading consensus-based industry standards body, producing standards for
22 wireless networking devices, including wireless local area networks (“WLANs”), wireless
23 specialty networks (“WSNs”), wireless metropolitan area networks (“Wireless MANs”), and
24 wireless regional area networks (“WRANs”). We also produce standards for wired Ethernet
25 networks, and technologies produced by implementers of our standards are critical for all
26 networked applications today.

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28 IEEE 802 LMSC is a committee of the IEEE Standards Association and Technical Activities, two
29 of the major Organizational Units of the Institute of Electrical and Electronics Engineers (IEEE).
30 IEEE has about 400,000 members in over 160 countries. IEEE’s core purpose is to foster
31 technological innovation and excellence for the benefit of humanity. In submitting this document,
32 IEEE 802 LMSC acknowledges and respects that other components of IEEE Organizational Units
33 may have perspectives that differ from, or compete with, those of IEEE 802 LMSC. Therefore,
34 this submission should not be construed as representing the views of IEEE as a whole¹.

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36 Please find below the responses of IEEE 802 LMSC on Section 4.12.41 of “the Migration Plan”.

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

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40 IEEE 802.11 based Wi-Fi technologies brings unique, important and consequential improvements
41 to access and affordability measures as the suitable complement to full-fibre upgrades in South
42 Africa. Indeed, a study by OpenSignal found that South Africa is leading Africa’s pace on Wi-Fi
43 connectivity. The study found that in South Africa, smartphone users are more likely to connect
44 to Wi-Fi than the mobile-only internet². In addition, significant economic value is provided by
45 Wi-Fi to the South Africa’s economies: the economic value reached USD \$31.0 billion in 2021,
46 and is expected to increase to USD \$44.2 billion by 2025³.

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48 ***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: 31 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: 31 May 2024].

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

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53 The ITU World Radiocommunications Conference 2023 (WRC-23) explicitly recognized that the
54 6425 MHz to 7125 MHz frequency band is used for the implementation of wireless access systems
55 (WAS), including radio local area networks (RLANs). Many countries and regions including the
56 USA, Canada, Brazil, South Korea, and Saudi Arabia have already allocated the entire 6 GHz band
57 (i.e., 5925 MHz to 7125 MHz band) for license-exempt operation. Availability of the entire 6 GHz
58 band for license-exempt use will create economies of scale and produce a robust equipment mar-
59 ket, benefitting South Africa’s businesses, consumers, and economy, while providing significant
60 societal benefits.

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62 In January 2024, Wi-Fi Alliance introduced⁴ Wi-Fi CERTIFIED 7™ based on IEEE P802.11be
63 technology⁵. With Wi-Fi 7 products already in the market, Wi-Fi deployments are going through
64 a second generation upgrade in the entire 6 GHz band globally⁶. IEEE P802.11be’s global 6 GHz
65 channelization is designed to accommodate multiple 160 MHz and 320 MHz channels throughout
66 the 5925 MHz to 7125 MHz band, where available. ICASA’s current designation of 500 MHz of
67 the 6 GHz band from 5925 MHz to 6425 MHz for license-exempt operation provides for only one
68 320 MHz channel, while the 5925 MHz to 7125 MHz band would allow three such channels to
69 support Gigabit connectivity in South Africa.

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71 Conclusion

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

77

78 Respectfully submitted

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80 By: /ss/.

81 James Gilb

82 IEEE 802 LAN/MAN Standards Committee Chairman

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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: 31 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: 31 May 2024].