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Independent Communications Authority of South Africa
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RE: Notice of Intention to Amend Annexure B of the Radio Frequency Spectrum Regulations in Respect of Short-Range Devices, 15 December 2022

Dear Colleagues:

Wi-Fi Alliance commends the Independent Communications Authority of South Africa (the "ICASA") on its ongoing work in the area of spectrum management. The Notice of Intention to Amend Radio Frequency Regulations in Respect of Short-Range Devices ("*the Notice*") will assist the ICASA in the effort to advance regional digital development, foster investment, innovation and competitiveness in telecommunications sector while managing spectrum for the maximum public benefit.

Growing Demand for Wi-Fi Connectivity Requires Additional Spectrum Access

Tens of millions of South Africans rely on Wi-Fi to connect billions of devices every day, and studies show this is increasing rapidly.[1/] In fact, Wi-Fi devices are now the primary means by which South Africans connect to the Internet. This central role will only increase because the future of wireless connectivity is more data traffic, more devices, more services and applications and much lower latency. These requirements cannot be fully addressed by wide area (e.g., 5G) networks. Instead, short range networks (e.g., Wi-Fi) in combination with broadband-to-home/building are integral to achieving the ICASA's connectivity objectives identified in the Strategic Plan for 2020/21-2024/25.

Future of Wi-Fi Technology in South Africa Depends on Access to 5925-6425 MHz and 6425-7125 MHz Frequency Bands

This *Notice* comes at a pivotal time in the development of the Wi-Fi ecosystem. Recently, Wi-Fi Alliance introduced the new Wi-Fi 6E brand to distinguish the latest generation Wi-Fi 6 devices that are capable of 6 GHz operation. Wi-Fi 6E brings a common industry name for Wi-Fi users to identify devices that offer the features and capabilities of Wi-Fi 6 – including higher performance, lower latency, and faster data rates – extended into the 5925–7125 MHz frequency band ("6 GHz band"). Wi-Fi 6E devices are quickly becoming

available, following regulatory approvals in several countries. As the 6 GHz regulatory landscape evolves, Wi-Fi Alliance member companies continue to expand the Wi-Fi 6E ecosystem even further. Initial deployments in the band include Wi-Fi 6E consumer access points, smartphones, computers, and televisions, followed by enterprise-grade access points. Industrial environments are also expected to see strong adoption of Wi-Fi 6E to deliver applications including machine analytics, remote maintenance, and virtual employee training (see Wi-Fi Alliance 2022 Wi-Fi trends). Wi-Fi 6E utilizes the lower 6 GHz (i.e., 5945–6425 MHz) and upper 6 GHz (i.e., 6425–7125 MHz) sub-bands to support much anticipated immersive experiences use cases (e.g., VR/AR/XR, industrial IoT, automotive, telepresence, 3D-video, and other applications). The list of Wi-Fi 6E certified products is already growing. In 2021, over 300 million Wi-Fi 6E devices entered the market and over 350 million devices in 2022. Regulatory harmonization in the 6 GHz band will create economies of scope and scale and produce a robust equipment market, benefitting South African businesses, consumers, and the economy.

Wi-Fi continues its rapid rate of innovation with work underway within Wi-Fi Alliance to define the next generation of Wi-Fi (i.e., Wi-Fi 7). Wi-Fi 7 is intended to deliver unprecedented quality of service (QoS) at higher data rates and lower latencies necessary for a growing set of demanding applications and use cases such as VR/AR/XR, Industrial IoT, automotive, telepresence, and immersive 3-D. Based on the IEEE 802.11be standard, Wi-Fi 7 will support channel bandwidths of up to 320 MHz, Multi-link Operation, 4096-QAM, improved power consumption with Target Wake Time, and other features. In this regard, Wi-Fi Alliance asks the ICASA to note that Wi-Fi 7 optimal performance will depend on access to multiple wider (e.g., 320 MHz) channels in the 6 GHz band. Without Wi-Fi access to the 6425-7125 MHz band, South African consumers and enterprises will not realize the full benefits of Wi-Fi 6E, Wi-Fi 7 and future generations of Wi-Fi technologies.

Wi-Fi Alliance respectfully asks the ICASA to note that the 6425-7125 MHz frequency band ("upper 6 GHz band") is uniquely suited to deliver these connectivity benefits to French consumers and business. Already, the upper 6 GHz band has been made available in several countries (representing more than 31% of the global GDP) on a license-exempt basis for Wi-Fi, and a range of low-cost, low-power equipment, capable of high data speeds is increasingly available as a result. Such equipment supports a wide variety of uses, achieving South Africa's communication policy objectives without disrupting important incumbent operations in the 6425-7125 MHz band. Access to less than the entire 6 GHz band (i.e., lower and upper 6 GHz bands) would substantively reduce Wi-Fi performance in terms of latency, determinism and data throughput. The 5925-6425 MHz band (i.e., 500 MHz) does not offer sufficient spectrum bandwidth to support future Wi-Fi connectivity and innovative use-cases. And, there is no alternative spectrum to support growing demand for Wi-Fi connectivity. Access to less than the entire 5925-7125 MHz band (1200 MHz) would substantively reduce Wi-Fi performance in terms of QoS at higher data rates and lower latencies. Without access to the 6425-7125 MHz, Wi-Fi capabilities in South Africa will be permanently impaired, undermining connectivity goals and objectives.

Commercial 5G/IMT Deployments Are Not Practical in the 6425-7125 MHz Frequency Band

Wi-Fi Alliance respectfully asks the ICASA to take in to account that even if the 2023 World Radiocommunication Conference (WRC-23) were to identify the 6425-7125 MHz band for IMT in some countries, significant time (i.e., years) and investments (i.e., hundreds of billions of SA Rands) would be required to develop, implement, deploy and operate 5G (IMT) networks in the upper-6 GHz band. It is

unlikely that such 5G (IMT) networks would be commercially viable, given their limited market scale and harmonization. Proposed "macro-base station" or other quasi-IMT implementations simply lack the economies of scope and scale necessary for a robust equipment ecosystem or commercial viability. In short, additional 6 GHz spectrum allocations for 5G will not address the underlying problems of 5G network deployments. In fact, the IMT proponents' assertions on the need for identification in yet another frequency band (i.e., 6425-7125 MHz) are simply irrational. This is clearly evidenced by recently published European Commission's Digital Economy and Society Index 2022, which states that "*spectrum assignment, an important precondition for the commercial launch of 5G, is still not complete: only 56% of the total 5G harmonized spectrum has been assigned, in the vast majority of Member States*". Moreover, the IMT proponents are also advocating for alternative mid-band spectrum in the 7-15 GHz range. These facts are concisely presented in the recently adopted UK Ofcom position on 6425-7125 MHz at WRC-23. Given that purported IMT spectrum needs can be accommodated in other frequency bands, Wi-Fi Alliance respectfully asks the ICASA to consider that the 6425-7125 MHz frequency range is the only mid-band spectrum that has been identified for Wi-Fi expansion by policymakers and industry worldwide.

CONCLUSION

Policymakers worldwide recognize that wireless connectivity is increasingly dependent on Wi-Fi and other license-exempt technologies Wi-Fi Alliance appreciates the opportunity to contribute to the ICASA's efforts.

Respectfully submitted,

/s/ Alex Roytblat

WI-FI ALLIANCE
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