

January 30, 2022

Independent Communications Authority of South Africa
350 Witch-Hazel Avenue,
Eco Point Office Park,
Eco Park, CENTURION,
Gauteng

Re: Notice of Intention to Amend Annexure B of the Radio Frequency Spectrum Amendment Regulations, 2021

Dear Independent Communications Authority of South Africa,

The Dynamic Spectrum Alliance (DSA¹) respectfully submits these comments in response to the Independent Communications Authority of South Africa (the Authority) ‘Notice of Intention to Amend Annexure B of the Radio Frequency Spectrum Amendment Regulations, 2021’ (Notice) in which the Authority proposes to incorporate the lower 6 GHz (5925 –6425 MHz) band for Non-Specific Short-range Applications. The DSA commends the Authority for its decision to allow license-exempt devices in the 6 GHz band. South Africa joins a growing list of countries worldwide that are adopting policies to facilitate access by Wireless Access Systems including Radio Local Area Networks (WAS/RLAN) to additional spectrum that will support the latest technology for wireless networks, including Wi-Fi 6E and Wi-Fi 7. The DSA agrees with the Authority’s observation that “[t]he lower 6 GHz band is rapidly emerging worldwide as a key component in broadband rollout and uptake, providing an essential local loop component to support fiber or fixed wireless access (FWA) backhaul and Wi-Fi deployment.”²

This amendment is an important first step towards realizing the South African national broadband plan and its objectives of enabling socio-economic growth and development. As a next step, the DSA recommends that the Authority incorporate the upper 6 GHz band (6425-7125 MHz) into Annexure B so both consumers and businesses can take advantage of the gigabit data rates required for many applications such as video conferencing, telemedicine, online education, gaming, and augmented/virtual reality. We also respectfully encourage the Authority to adopt a “No Change” position on the WRC-23 Agenda Item 1.2 for the 6425-7125 MHz band.

Countries all over the world, including South Africa, face severe network capacity constraints on license-exempt networks. There is simply not enough spectrum allocation for RLANs to operate

¹ The DSA is a global, cross-industry, not for profit organization advocating for laws, regulations, and economic best practices that will lead to more efficient utilization of spectrum, fostering innovation and affordable connectivity for all. Our membership spans multinationals, small-and medium-sized enterprises, as well as academic, research and other organizations from around the world all working to create innovative solutions that will benefit consumers and businesses alike by making spectrum abundant through dynamic spectrum sharing. A full list of DSA members is available on the DSA’s website at www.dynamicspectrumalliance.org/members.

² See <https://www.icasa.org.za/legislation-and-regulations/notice-of-intention-to-amend-annexure-b-of-the-radio-frequency-spectrum-amendment-regulations-2021>.

without congestion. It has never been more important to ensure that spectrum allocations continue to meet the demand of these burgeoning networks. It is, therefore, imperative that South African businesses and consumers are able to experience fully the benefits of the latest generations of Wi-Fi technology, which can only occur with access to the full 1200 MHz in the 6 GHz band.

In our 2021 report titled *6 GHz License Exempt: Why the full 1200 MHz and why now?*, the DSA offers arguments in support of countries permitting the entire 1200 MHz of spectrum to be used for license-exempt use. Primarily, if all 1200 MHz of spectrum were to be allocated for license-exempt use, businesses would be able to take advantage of large channel widths to provide greater connectivity. We note, “[o]pening only 500 MHz of the 6 GHz band would require channel plans in dense deployments to continue relying on 20 MHz or 40 MHz bandwidths.”³ Such small channels would not help to sufficiently reduce the capacity constraints already experienced by many RLANs and will be insufficient to support the 320 MHz wide channels enabled by Wi-Fi 7. With wider channels, access points will be able to support extremely high-capacity bandwidths enabling vital applications for the 21st century. These channel widths are only available if the Authority takes the next step to allocate the entire 6 GHz band for license-exempt use.

While the technological impacts of access to 1200 MHz of contiguous spectrum are hard to understate, there are immense economic benefits as well. A recently published study by Telecom Advisory Services, commissioned by the DSA, presents the economic value of allowing unlicensed use of the entire 6 GHz band (5925-7125 MHz) in South Africa.⁴ It estimates, ‘the cumulative economic value between 2021 and 2030 associated with allocating the 1200 MHz in the 6 GHz band to Wi-Fi in South Africa would be US\$ 57.76 billion. This is broken down into US\$ 34.81 billion in GDP contribution, US\$ 13.32 billion in producer surplus to South African enterprises, and US\$ 9.63 billion in consumer surplus to the South African population.’⁵ In addition, the allocation of the entire band for license-exempt use will result in a significant contribution to a reduction of South Africa’s digital divide. By providing affordable paid service and free access over hot spots as a result of allocating the full 6 GHz band to Wi-Fi, an incremental 1,252,600 South Africans will be able to gain access to the Internet by 2030.⁶

Many other mid-band frequencies have been already identified for IMT in South Africa, and the Authority has established an ambitious strategy that will enable the deployment of 5G technology in such a manner that will be most beneficial to the country. From the economic study that we have done for South Africa, the DSA is convinced that the upper 6 GHz band can offer a higher value for the nation immediately if it is designated for WAS/RLAN use under a license-exempt framework, rather than be cleared in the future for 5G use. Licensed-exempt access ultimately complements 4G and 5G services,⁷ and users will have a better 5G mobile broadband services when used in combination with license-exempt access to the 6 GHz band. Furthermore, operators can also benefit of the 5G New Radio

³ Dynamic Spectrum Alliance, “[6 GHz License Exempt: Why the full 1200 MHz and why now?](#)”.

⁴ See <https://www.totaltele.com/512580/6-GHz-unlicensed-access-and-Wi-Fi-6E-to-add-billions-to-Indonesian-and-African-economies-reveals-Dynamic-Spectrum-Alliance>.

⁵ Dynamic Spectrum Alliance, “[Assessing the economic value of unlicensed use of the 6 GHz band in South Africa.](#)”

⁶ Id.

⁷ See Enterprises building their future with 5G and Wi-Fi 6, Deloitte’s Study of Advanced Wireless Adoption ([link](#)).

specification for unlicensed spectrum, called 5G NR-U, because 3GPP Release 16 includes the 6 GHz band for unlicensed access.


In addition to making the entire 1200 MHz of the 6 GHz band available for license-exempt low power operations for indoor and outdoor uses, DSA also encourages the Authority to support a Standard Power device allocation in the 6 GHz band. Standard Power devices propagate farther and enable greater download and upload speeds on end user devices. As highlighted in our 6 GHz report, “[S]tandard Power use cases are particularly important to a number of deployment types and settings, including manufacturing, logistics, agriculture, rural broadband, higher education, hospitality, healthcare, and municipal.”⁸

Standard Power and outdoor license-exempt devices are able to operate in the 6 GHz band under a spectrum sharing regime known as Automated Frequency Coordination (AFC). Spectrum sharing is an increasingly used tool by authorities around the world to balance spectrum allocations and ensure new commercial entrants and incumbents can co-exist in a band without harmful interference. For Standard Power devices to maximize spectrum usage, the Authority would need to allocate the full 1200 MHz for license-exempt operations. Our report notes, “[o]pening the full 1200 MHz of the 6 GHz band to license-exempt use will provide the overall spectrum needed to support Standard Power, under AFC control, whereas 500 MHz would be insufficient for Standard Power in the age of 80, 160, and 320 MHz channels.”⁹

AFC systems have been demonstrated publicly and are in the process of being certified by multiple national regulatory authorities. Several DSA members have developed AFC systems for the 6 GHz band are seeking authorization to operate in countries including the United States, Canada, Brazil, Korea, and Saudi Arabia – all of which are in the process of finalizing their regulations for license-exempt access to the full 6 GHz band.

The DSA appreciates the opportunity to provide comments on the Authority’s proposed amendment to incorporate the lower 6 GHz (5925 –6425 MHz) band for Non-Specific Short-range Applications. We strongly believe greater spectrum allocations for license-exempt devices will enhance the digital infrastructure of South Africa and enable businesses and consumers to take advantage of next generation wireless connectivity and digital applications. We look forward to working with the Authority on next steps, including expanding license-exempt operations to 6425-7125 MHz and adopting rules to permit Standard Power and outdoor devices under management of AFC.

Respectfully submitted,



Dr Martha SUAREZ
President,
Dynamic Spectrum Alliance

⁸ Dynamic Spectrum Alliance, [6 GHz License Exempt: Why the full 1200 MHz and why now?](#) at 13.

⁹ Id.