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Comments of the Dynamic Spectrum Alliance to Infocomm Media Development Authority's Consultation on the Proposed Allocation of the 6 GHz Band

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Ms. Aileen Chia
Director-General (Telecoms and Post)
Deputy CE (Connectivity Development & Regulation)
Infocomm Media Development Authority
10 Pasir Panjang Road
#03-01 Mapletree Business City
Singapore 117438

Re: Proposed Allocation of 6 GHz Band in Singapore

Dear Ms. Chia,

The Dynamic Spectrum Alliance (DSA[1]) respectfully submits these comments in response to the Infocomm Media Development Authority (IMDA) Public Consulation on the '*Proposed Allocation of 6 GHz Band in Singapore,*' in which IMDA proposes to allocate the lower 500 MHz of the 6 GHz band (5925-6425 MHz) for Radio Local Area Networks (RLANs). The DSA commends IMDA for its decision to allow license-excempt devices in the 6 GHz band on a shared basis. Singapore joins a growing list of countries worldwide that are adopting rules to facilitate access by RLANs to additional spectrum to support the latest Wi-Fi technologies, Wi-Fi 6E and Wi-Fi 7. While this proposed allocation is a critical first step, the DSA encourages IMDA to support access to the entire 6 GHz band (5925-7125 MHz) for license-exempt device operations. With access to the entire band, consumers and enterprises alike will be able to take advantage of next-generation technological standards and applications, including augment/virtual reality, high-capacity video monitoring, and increased online education.

The DSA agrees with IMDA's assessment that "[t]he increasing demand for Wi-Fi connectivity within homes and offices is driven by the increasing number of digitally connected users and more sophisticated online applications, as well as the movement of business and leisure activities online over the years (e.g.., work-from-home arangements, home-based learing, e-commerce, etc.)."[2] Given increasing demand for wireless connectivity, consumers and enterprises are beginning to come in direct contact with the repercussions of device saturation and interference in the spectrum bands currently allocated for license-exempt device use. Simply put, there is not

[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* IMDA "Public Consultation on Proposed Allocation of 6 GHz Band in Singapore" at para. 3.

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enough spectrum for RLANs to operate without congestion. Futhermore, the DSA agrees with IMDA's assessment that Wi-Fi needs to be able to "keep pace with 5G's potentional peak speeds of up to 20 Gbps, to allow for seamless end-to-end connection and experience for users as they move across mobile broadband and Wi-Fi mediums."[3] This charge is impossible without access to additional spectrum. Therefore, the full 6 GHz band should be made available to support the speeds and seamless connectivity that IMDA envisions.

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. Were all 1200 MHz available, businesses would be able to take advantage of large channel widths. 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."[4] Such small channels would not help reduce the capacity constraints already experienced by many RLANs and will be insufficient to support the 320 MHz wide channels that Wi-Fi 7 will enable. Furthermore, by allocating only the lower 6 GHz band frequencies for license-exempt use, countries run the risk of the client device ecosystem developing for only the lower half of the band and for such devices to be unable to take advantage of the full 1200 MHz in the future.

In addition to authorizing low power indoor (LPI) and very low power (VLP) RLAN operations, the DSA also encourages IMDA to authorize Standard Power (SP) devices across the entire 6 GHz band. 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."[5]

SP and outdoor license-exempt devices are able to operate in the 6 GHz band through use of a spectrum sharing tool known as Automated Frequency Coordination (AFC), which ensures protection of incumbent services from new SP and outdoor RLAN operations. 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 and are seeking authorization to operate in countries, including the United States, Canada, Brazil, Korea, and Saudi Arabia – some of which have already finalized their regulations for license-exempt access to the full 6 GHz band.

DSA appreciates the opportunity to provide comments on IMDA's proposed allocation of the lower 500 MHz of the 6 GHz band for RLAN/Wi-Fi use. We strongly encourage IMDA to enable Singaporean consumers and enterprises to take advantage of next generation wireless connectivity and digital applications by expanding license-exempt operations to the entire 6 GHz

[3] Id at para 6 section B.
[4] Dynamic Spectrum Alliance, "6 GHz License Exempt: Why the full 1200 MHz and why now?" at 11.
[5] Id at 13.

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band and adopting rules to permit SP and outdoor RLAN devices under management of AFC systems.

Respectfully submitted,

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