



10900-B Stonelake Boulevard, Suite 126 • Austin, Texas 78759 U.S.A.
Phone: +1-512-498-9434 (WIFI) • Fax: +1-512-498-9435
www.wi-fi.org

July 10, 2019

VIA E-MAIL

Ms. Aileen Chia,
Deputy Chief Executive (Policy, Regulation & Competition Development),
Director-General (Telecoms & Post)
Infocomm Media Development Authority
10 Pasir Panjang Road
#03-01 Mapletree Business City
Singapore 117438

Re: IMDA Consultation Document On Proposed Policy Frameworks For the Allocation of 800 MHz, TDD 1900 MHz and FDD 2100 MHz Spectrum Band

Dear Ms. Chia,

Wi-Fi Alliance®^{1/} applauds the ongoing work of the Info-Communications Media Development Authority (“IMDA”) in the above-referenced consultation^{2/} to ensure timely availability of spectrum to support mobile networks for the consumers in Singapore. Wi-Fi Alliance generally supports the proposed spectrum frameworks proposed in the Consultation, but it respectfully recommends that the IMDA consider international spectrum harmonization of the 800 MHz band for Short-Range Devices (“SRDs”).

Wi-Fi Alliance is a global, non-profit industry association of over 800 leading companies from dozens of countries devoted to seamless interoperability. With technology development, market building, and regulatory programs, Wi-Fi Alliance has enabled widespread adoption of Wi-Fi® worldwide by certifying thousands of Wi-Fi products each year. It is also an active participant in international

^{1/} Wi-Fi®, the Wi-Fi logo, the Wi-Fi CERTIFIED logo, Wi-Fi Protected Access® (WPA), WiGig®, the Wi-Fi Protected Setup logo, Wi-Fi Direct®, Wi-Fi Alliance®, WMM®, Miracast®, and Wi-Fi CERTIFIED Passpoint®, and Passpoint® are registered trademarks of Wi-Fi Alliance. Wi-Fi CERTIFIED™, Wi-Fi Protected Setup™, Wi-Fi Multimedia™, WPA2™, Wi-Fi CERTIFIED Miracast™, Wi-Fi ZONE™, the Wi-Fi ZONE logo, Wi-Fi Aware™, Wi-Fi CERTIFIED HaLow™, Wi-Fi HaLow™, Wi-Fi CERTIFIED WiGig™, Wi-Fi CERTIFIED Vantage™, Wi-Fi Vantage™, Wi-Fi CERTIFIED TimeSync™, Wi-Fi TimeSync™, Wi-Fi CERTIFIED Location™, Wi-Fi CERTIFIED Home Design™, and the Wi-Fi Alliance logo are trademarks of Wi-Fi Alliance.

^{2/} Public Consultation On Allocation of Spectrum of 800 MHz, TDD 1900 MHz and FDD 2100 MHz Spectrum Band, 17 May 2019, available at <https://www2.imda.gov.sg/regulations-and-licensing/Regulations/consultations/Consultation-Papers/2019/Public-Consultation-on-Allocation-of-Spectrum-for-Enterprise-and-Public-Mobile-use> (“Consultation”).

proceedings, promoting regulatory actions that facilitate Wi-Fi connectivity while maximizing unlicensed spectrum use generally.

Recently, the IMDA accurately observed that the significance of the economic impact of IoT is well-documented and increasingly being felt, with the increasing adoption of IoT solutions among consumers, enterprises and governments.^{3/} Recognizing this important fact, Wi-Fi Alliance has introduced Wi-Fi HaLow™ as its designation for products incorporating the IEEE 802.11ah industry standard. Wi-Fi HaLow, which has been specifically designed for IoT networking in unlicensed spectrum below 1 GHz,^{4/} offers longer range, lower power, multi-year battery life and Internet connectivity. It enables a variety of new power-efficient use cases in the Smart Home, connected car, and digital healthcare, as well as industrial, retail, agriculture, and Smart City environments. Wi-Fi HaLow supports a range of up to 1 kilometer and provide a more robust connection in challenging environments where the ability to more easily penetrate walls or other barriers is an important consideration.

The benefits of the IoT technologies like Wi-Fi HaLow depend on internationally harmonized access to sub 1 GHz. Access to harmonized sub 1 GHz spectrum will generate highly significant logistical and scaling benefits for IoT consumers. Harmonization leads to a simplified channel discovery process and reduced product cost, speeding the process of developing and deploying these systems and bringing their benefits to more consumers, more quickly. It also encourages new applications in ‘wearables’, agriculture and logistics.

That is why Wi-Fi Alliance asks the IMDA to consider that other countries have taken specific regulatory steps to make sufficient spectrum available for the SRDs access. In the Americas, for example, 26 MHz of spectrum is available to users without major regulatory limitations that may restrict beneficial and new IoT applications.^{5/} Similarly, in Europe, harmonized radio spectrum access for SRDs is available in 863-868 MHz, 874-876 MHz and 915-921 MHz frequency bands.^{6/} Preserving SRD access to 866-869 MHz and 915-925 MHz frequency ranges in Singapore would provide the best opportunity for internationally harmonized spectrum and provide sufficient spectrum capacity to support what is expected to be the explosive growth of IoT.

Wi-Fi Alliance encourages IMDA to take these facts in to account in the development of allocation approach for the 800 MHz spectrum band.

* * *

^{3/} See IMDA IOT Cyber Security Guide, Version 1, January 2019, Page 3, available at <https://www.imda.gov.sg/-/media/imda/files/regulation-licensing-and-consultations/consultations/open-for-public-comments/consultation-for-iot-cyber-security-guide/imda-iot-cyber-security-guide.pdf>.

^{4/} See Wi-Fi Alliance, Discover Wi-Fi HaLow, available at <https://www.wi-fi.org/discover-wi-fi/wi-fi-halow>.

^{5/} See 47 C.F.R. § 15.247 (Federal Communications Commission).

^{6/} See [EC Decision 2018/1538/EU](#) and [EC Decision 2017/1483/EU](#)

Wi-Fi Alliance appreciates this opportunity and looks forward to continuing to work with the IMDA on these important matters. Should you have any questions, please contact the undersigned.

Respectfully submitted,

/s/ Alex Roytblat

Alex Roytblat

WI-FI ALLIANCE

Senior Director, Worldwide Regulatory
Affairs

aroytblat@wi-fi.org