

21st July 2017

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

Dear Ms. Chia

I thank IMDA for the opportunity to comment on the public consultation paper “5G MOBILE SERVICES AND NETWORKS”.

As a private individual and a WiFi user I would like to comment on **Part IV: Use of licence exempt spectrum for IMT services** :

I agree with and fully support IMDA’s view that there is widespread adoption of Wi-Fi networks in Singapore and support the approach taken by IMDA of requiring studies to be conducted to ensure that the deployment of LAA/LTE-U do not impact Wi-Fi users. Such tests should take into account local conditions, such as the permitted transmit power<sup>1</sup> of Wi-Fi access points and the high Wi-Fi user density in Singapore.

I believe that many residential units constructed before 2015 do not have structured cabling (Cat 5E and above) installed in every room. Consequently many of these households rely on Wi-Fi home networks to provide broadband connectivity to each of the rooms. In some business premises WiFi networks have replaced the traditional structured cabling networks. In the hospitality industry, hotels rely on Wi-Fi to provide internet access for their guests. At the airport Wi-Fi is used to provide broadband internet access to visitors and air travellers.

The WiFi (802.11) technology is designed to share spectrum so I have no doubt that LAA/LTE-U can coexist with WiFi. Regardless of how well LAA/LTE-U can coexist with WiFi it does not reduce the occupation of frequency channels by LAA/LTE-U, leading to less channels available to WiFi users. This can potentially lead to the congestion of the 5 GHz band.

I believe that at present the 5 GHz band is lightly used<sup>2</sup> because WiFi users are just starting to adopt devices (access points, laptops, smartphones, etc) with WiFi capable of using the 5 GHz. Therefore I would like to propose that the decision on LAA/LTE-U be deferred by at least 2<sup>3</sup> years to allow home users the time to upgrade their WiFi equipment and to consider limiting LAA/LTE operation to the upper range<sup>4</sup> of the 5 GHz band.

Sincerely

Khoo Teng Lock

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<sup>1</sup> The permitted maximum power in Singapore may be different from those permitted in countries where LAA/LTE-U has been adopted or where LTE-U/LAA trials have taken place.

<sup>2</sup> Compared to the 2.4 GHz band.

<sup>3</sup> After WRC-2019

<sup>4</sup> 5645-5725 MHz = 4 x 20 MHz