



19 June 2019

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

RE: Public Consultation on 5G Mobile Services and Networks

Dear Ms. Chia:

On behalf of the US-ASEAN Business Council (“**the Council**”) and its members, I am writing to express our sincere gratitude to the Infocomm Media Development Authority (“**IMDA**”) and the Government of Singapore for the opportunity to participate in the public consultation on 5G Mobile Services and Networks (“**5G Policy**”). Sharing IMDA’s vision for Singapore to become a global front-runner in secure and resilient 5G applications, we hope that our comments will be constructive for the further development of the 5G Policy.

Given the transformative and far-reaching impacts of 5G deployment, the Council advocates an approach which enables innovation while optimizing services delivery and maintaining market openness. To this end, we hope the following policy recommendations could be taken into consideration in the development of Singapore’s 5G regulations and related infrastructure:

1. Flexibility for Operator to Decide on Standalone or Non-Standalone Approach

We acknowledge and support IMDA’s desire to harness the full potential of 5G deployment. By allowing either a ‘non-standalone’ (NSA) or a ‘standalone’ (SA) infrastructure will allow Singapore’s mobile network operators to deploy 5G technology rapidly and simultaneously leverage their LTE network assets to the best advantage. It will also provide Singapore access to the full suite of 5G capabilities over time as and when the investment required to upgrade the core network is available . The Council is cognizant that ‘non-standalone’ operations can serve as an anchor for the nascent 5G network and can be more cost-effective. However, if IMDA decides to require operators to adopt the SA approach, we recommend that IMDA consider a sufficiently low base price for 5G spectrum in consideration of the added cost that operators will need to bear during the network deployment.

2. Enterprise Use of 5G Networks

We recommend that the 5G policy encourage and incentivize network operators to develop capabilities that serve enterprise uses of 5G networks. Given Singapore’s nationwide fiber broadband network, 5G’s capacity to deliver last-mile fixed wireless broadband to homes becomes less relevant. We, thus, concur with IMDA’s assessment that the use case of 5G lies primarily with enterprises. As such, it is critical that operators partner closely with industry players and tailor 5G solutions across all verticals. **We also recommend that IMDA allow third-party private networks to be built based on 5G spectrum.** This ensures the provision of diverse 5G services, instead of restricting usage to existing operators. Giving operators the flexibility to bundle 5G services would, furthermore, enable them to better meet enterprise needs.

In addition, the **capability for network slicing is an important feature and benefit of 5G networks, and we recommend that regulatory frameworks allow flexibility for operators to implement and monetize such capability** and not be restricted in their approach towards network management. This framework would allow localized, private broadband networks to serve specialized users, including public safety, critical infrastructure, industrial, utilities and related personnel. Furthermore, there may be a need for roaming between commercial carrier networks and the small, private broadband networks. The issue of spectrum will be further discussed under Point 3: *Efficient and Flexible Spectrum Use*.

3. Efficient and Flexible Spectrum Use

We recommend that IMDA adopt a technology- and service-neutral approach towards spectrum licensing. This will ensure operators can repurpose frequency bands easily and facilitate market adaptation to shifting 5G technologies, encouraging the efficient reuse of existing spectrum resources (a process called “refarming”) to meet the growing 5G demand. Such inclusive licensing also enables all parts of the 5G ecosystem to be supported (including satellite systems, mobile broadband systems, etc.). **We further emphasize flexibility as the key enabler of innovation in network services.** We recommend that the Government refrain from policies that restrict the deployment of available spectrum or repurposing of sites for 5G. Flexible arrangements can ensure that service providers remain responsive to changes in technology, services, or usage patterns.

Regarding specific spectrum resources, the sub-3 GHz bands are considered ideal for coverage, though 1.5 GHz TDD is also an acceptable option. Moreover, **we propose that 5G can be deployed in existing GSM/UMTS/LTE bands, especially in bands currently used for 2G/3G technology.** With the IMT-2020 WRC-19 agenda opening gigahertz of new frequencies for the delivery of 5G services, new regulations should encourage the adoption of mobile technology across verticals. Such regulations are key to the success of 5G network deployment as they will promote innovation and digital transformation across industries. To accelerate this process, **we recommend a licensing framework that enables enterprises to access mobile spectrum and enables local licensing of mobile spectrum instead of national allotments.**

Furthermore, **we recommend that IMDA reserves some part of the 3.3-3.8 GHz (the mid band) for local private licensing in small geographic areas.** To support technology-neutral access to shared spectrum and make local licensing more efficient, we encourage usage of the mobile 5-6 GHz and millimeter wave bands. To implement this technological neutrality, IMDA could facilitate a spectrum split between carriers and verticals in key bands where 5G is expected to be deployed, similar to that of Germany or planned for Sweden. Alternatively, IMDA could implement local licensing rules for all applicants with caps to limit spectrum hoarding in mid bands. More generally, **we recommend a review of the current rules concerning the mid band and the reservation of a part of the mid band for vertical use under local/private broadband PMR regulations,** similar to those available in the 400 MHz for narrow band PMR.

4. Leverage Existing Systems

We recommend that IMDA harmonize frequency arrangements with other global 5G players to make use of existing technological developments and industry knowledge. For example, the 4.8-4.99GHz band is already in use by China and the United States, so there may be existing equipment setups and usage norms which IMDA can adopt or adapt to make efficient use of such frequency bands. Use of existing bands may require coordination between current service providers to ensure minimal interference among existing spectrum users.

5. Market Contestability

We recommend that IMDA pursue policies that favor the availability and efficiency of both license-exempt and licensed spectrums. On one hand, licensed access provides network operators with the certainty necessary when committing an investment. On the other hand, spectrum which are license-exempt increase market contestability and efficiency and leverage technology built for unlicensed spectrum that complement 5G such as Wi-Fi 6.

This balanced provision of both is, moreover, conducive to the development of high-capacity, low-latency applications as well as long-range, low-power, and low-capacity applications. Moreover, **we concur with IMDA's assessment to facilitate at least two nationwide 5G networks.** The two operators will facilitate a competitive environment in 5G services and encourage the entrance of private operators. That said, given the size of Singapore's market, accommodating too many operators should be cautioned against.

6. Broad Regulatory Considerations Beyond ICT

Fostering a vibrant and innovative 5G ecosystem is an enormous task that extends beyond regulations predominantly involving the ICT sector. **We recommend that the Government of Singapore ensure that the broader regulatory environment is enabling for enterprise risk-taking and innovation.** This approach facilitates usage by commercial carrier 5G networks and localized, private broadband networks to meet the needs of specialized users. An evaluation of policy frameworks in adjacent areas such as intellectual property protection, public infrastructure, and cybersecurity is ideal toward such an effort.

We thank you again for the opportunity to provide comments on the proposed 5G policy and commend your Government for continuing to conduct an open and transparent consultation process in the development of this important policy. Should you have any questions or need clarification on any of the points addressed, please do not hesitate to contact me [REDACTED]. Thank you for your time and consideration.

Sincerely,

US-ASEAN Business Council

cc: His Excellency Ashok Mirpuri, Ambassador of the Republic of Singapore to the United States
Ms. Stephanie Syptak-Ramnath, Chargé d'affaires, ad interim, U.S. Embassy in Singapore