

Axiata Response to Public Consultation Wireless Local Access Network (WLAN) in the 6GHz Frequency Band

Question	Response
<p>Question 1 MCMC seeks your views and comments on the demand for spectrum for Wi-Fi in the 6GHz frequency band</p>	<p>No comment</p>
<p>Question 2 MCMC seeks your views on comments on the emerging technologies utilizing the 6 GHz frequency band</p>	<p>We are of the view that, 6GHz should also be considered for IMT.</p> <p>6GHz provides a great mix of both capacity and coverage necessary to provide a perfect environment for 5G connectivity. This has led to 6GHz being earmarked as the next 5G mid-band spectrum. The larger bandwidth size available and its adjacency to existing 5G mid-band spectrum make it an ideal mid-band spectrum for 5G.</p> <p>A robust 5G network lays the foundation to drive the development of Malaysia's digital economy towards MyDigital aspirations by 2030. This has been recognized by the government with the acceleration of 5G implementation by end of 2021 under JENDELA. Following through the plan is ensuring a sufficient 5G spectrum be made available to secure a long-term success of 5G implementation in Malaysia.</p> <p>We also take note of the potential of unlicensed mobile technologies (e.g., 5G NR-U) utilizing 6GHz, however these are not substitutes to licensed 5G technologies and do not fulfill mid-band spectrum needs for 5G. The success of mobile technologies has always been on the foundation of licensed spectrum enabling operators to have better control of their spectrum utilization on the network resulting in a far superior quality of network and service. This becomes even more important when supporting 5G applications or use cases that are ultra-reliable and latency-sensitives such as mission critical communications.</p>
<p>Question 3 MCMC seeks your views and comments on the frequency range within the 6GHz frequency band that could be considered for Wi-Fi under the Class Assignment in Malaysia.</p>	<p>We are of the view that the entire 6GHz should be prioritized for IMT.</p>

Should MCMC consider allowing Wi-Fi to operate in the entire 1200MHz (5925MHz to 7125MHz frequency band) or only in the 500MHz (5925 MHz to 6425MHz Frequency band)?

A study by GSMA indicates an average of 2GHz of mid-band spectrum is needed before 2030 to deliver the ITU IMT-2020 requirements for 5G¹. This can be achieved by making available more harmonized mid-band 5G spectrum and facilitate technology upgrades to 5G in existing band.

Currently in Malaysia, only 200MHz² of mid-band spectrum has been identified for 5G leaving Malaysia 1800MHz short which would be necessary to support its 5G aspiration. This is further exacerbated with the current technology restrictions to upgrade existing spectrum bands to 5G. In comparison to its neighboring countries, Malaysia has a limited amount of mid-band for 5G, only in 3.5GHz and to a lesser extent the 700MHz band, which may put its 5G aspirations at risk, hence underscore the need to prioritize access to entire 6GHz for IMT to address this shortfall.

Country	Mid Band Range (1-6GHz)					
	1800MHz	2100MHz	2300MHz	2600MHz	3300MHz	3500MHz ³
Malaysia						Y* (200MHz)
Cambodia				In discussion for 5G	IMT	Y* (400MHz)
Thailand				Y (190MHz)		Y* (300MHz)
Indonesia	Y		Y	Y* (190MHz)		Y* (200MHz)
Philippines					IMT	Y (240MHz)
Singapore		In discussion for 5G ⁴				Y (200MHz)

Source: Axiata Internal data

Note :

Y assigned and used for 5G

Y* identified for 5G and soon to be released

¹ <https://www.gsma.com/spectrum/wp-content/uploads/2021/07/Estimating-Mid-Band-Spectrum-Needs.pdf>

² https://www.mcmc.gov.my/skmmgovmy/media/General/pdf/SRSP-MS-3500_July2021.pdf

³ 3300 MHz to 4200MHz frequency range

⁴ <https://www.imda.gov.sg/news-and-events/Media-Room/Media-Releases/2021/IMDA-To-Make-Available-New-5g-Spectrum-Bands-To-All-Mobile-Network-Operators>

IMT Identified for IMT (likely to be used for 5G)

Malaysia JENDELA plan sets an ambitious aspiration to provide all Malaysians with quality access to digital connectivity worldwide as well as to meet the national aspiration for 100Mbps mobile broadband speed via 5G technology. JENDELA Quarter 3 Report⁵ indicates the current mobile broadband speed is only 26 Mbps based on existing mobile technologies even with total mid-band spectrum allocation exceeding 400MHz⁶ to operators. This clearly shows a significant disparity needed to be addressed in terms of limited supply of spectrum resources if we want to meet the national aspiration of 100Mbps mobile broadband speed via 5G.

In terms of demand, the mobile data traffic will continue to grow in the future particularly with the technological advancement that 5G can offer. It is expected that with the growing demand for high-speed broadband connectivity, Fixed Wireless Access (FWA) will be an attractive service offering that may provide a more sustainable broadband connectivity solution to consumers. Due to the geography of Malaysia, coverage by FTTx technologies can only go so far before it becomes extremely prohibitive in respect to investment costs. A second point is that the number of service providers offering competitive fixed broadband services is very low, with one service provider having persistent dominance. Enabling a vibrant FWA services based on 5G would help inject much needed competition in this space. Even in developed markets like Australia⁷, FWA built on 5G is seen to be a viable competitor to FTTx networks. Ericsson forecasted the FWA global connections will reach over 180 million, out of these 5G FWA connections are expected to grow to more than 70 million by 2026, representing around 40 percent of total FWA connections⁸. The growing demand for FWA will continue as it becomes an increasingly cost-efficient alternative compared to other broadband connectivity and increasing capacity, enabled by greater spectrum allocations and technological advancements. Mid-band spectrum will complement the lower bands to provide 5G FWA, which are ideal for rural and remote areas where population is more spread out, whilst mmWave bands, which is more targeted to provide broadband access in more densely populated areas with ultra-fast 5G speed. FWA presents vast opportunities that Malaysia can benefit from, however this will only be possible if the right and facilitative environment are put in place which includes access to sufficient mid-band spectrum.

We take note of the diverse approaches taken by some countries on 6GHz spectrum allocation for unlicensed versus licensed services, which is largely driven by the difference in countries' needs or demands for the services, incumbent

⁵ <https://myjendela.my/Sitejendela/media/Doc/JENDELA-3rd-Quarterly-Report-2021.pdf>

⁶ 1800MHz, 2100MHz and 2600MHz spectrum allocation

⁷ <https://www.itnews.com.au/news/nbn-co-says-5g-competition-is-challenging-its-monopoly-status-565686>

⁸ <https://www.ericsson.com/4a03c2/assets/local/mobility-report/documents/2021/june-2021-ericsson-mobility-report.pdf>

	<p>use, and the extensiveness of existing infrastructure to support the services. One critical difference between such developed countries and Malaysia is the fact that the fixed infrastructure there is much more developed. This means WiFi-networks can be easily tagged on by end-users in their homes or SMEs to provide end-to-end broadband connectivity – hence the logic for some develop countries to designate much of the 6GHz band for WiFi. For Malaysia, this is not the case, a large proportion of the Malaysian public, especially in the sub-urban, semi-rural and rural areas are not within reach of adequate fixed infrastructure. This means that end-users there will still depend on a mobile broadband connection in order to cast a localized WiFi hotspot at their homes and SMEs. Hence it is better for the 6GHz band to be allocated for IMT directly instead of this two-step approach.</p> <p>The potential to harmonize 6GHz across the larger parts the globe as part of WRC-23 process, is also a key consideration by countries prior making their decisions as it would help to drive for a faster and significant ecosystem.</p> <p>We are of the view that with China taking the lead in allocating the entire 6GHz for IMT and its sizable market to create a large enough demand, it will pave the way for a significant ecosystem which Malaysia can benefit from. A partial spectrum allocation as adopted by the European Commission⁹ may also be an alternative approach for consideration should there be a strong enough evidence to warrant the needs for more spectrum in the mid-band by unlicensed services. However, this needs to be carefully assessed against the current use of these unlicensed services in existing license-exempt spectrum i.e 100MHz of 2.4GHz and 530MHz of 5GHz. It is also equally important to note the irreversibility of a policy decision, in this case when spectrum band is assigned to unlicensed use as it will be nearly impossible to clean it to allow licensed use in the future.</p>
<p>Question 4 MCMC seeks your views and comments on:</p> <ul style="list-style-type: none"> i. the coexistence between Wi-Fi and incumbent services (i.e. fixed service and fixed-satellite service); and 	<p>No comment</p>

⁹ 5945-6425 MHz for license-exempt

<p>ii. the potential interference mitigation between these services.</p>	
<p>Question 5 MCMC seeks your views and comments on the potential technical and operational conditions to be imposed if the 6GHz frequency band is introduced for Wi-Fi under the Class Assignment. Should part of the frequency band be limited to indoor operation? Should standard power devices operating under the Automatic Frequency Coordination system be adopted in Malaysia?</p>	<p>No comment</p>
<p>Question 6 What other key issues need to be considered in introducing Wi-Fi in the 6GHz frequency band</p>	<p>Kindly refer to response Q3</p>