11 October 2021

Malaysian Communications and Multimedia Commission
MCMC HQ Tower 1
Jalan Impact
Cyber 6
63000 Cyberjaya
Selangor Darul Ehsan
Malaysia

Attention: Spectrum Planning Division

Dear Sir/Madam,

DNB'S RESPONSE TO THE PUBLIC CONSULTATION ON THE WIRELESS LOCAL AREA NETWORK (WLAN) IN THE 6 GHZ BAND

We refer to the Public Consultation (PC) Paper on the Wireless Local Area Network (WLAN) in the 6 GHz band dated 12 August 2021.

Digital Nasional Berhad (DNB) wishes to thank MCMC for the opportunity to respond to the above-mentioned PC Paper. In this submission, DNB proposes making available the full 1200 MHz (5925 – 7125 MHz) for 5G to ensure that there will be sufficient spectrum to cater for the proliferation of 5G services and use cases.

Hence, we are pleased to enclose our response in **Appendix 1** for MCMC's consideration.

Please do not hesitate to contact us should you require any clarifications.

Thank you.

Best regards,

Zuraida Jamaluddin
Chief Corporate Affairs Officer

c.c.: Ralph Marshall, Chief Executive Officer, DNB

Appendix 1

No.	Question	DNB's Responses
1	MCMC seeks your views and comments on the demand for spectrum for Wi-Fi in the 6 GHz frequency band.	Although there is increasing demand for WLAN/Wi-Fi services and that the lower 6 GHz band is being considered in many countries for these systems, evidence also shows that mobile connectivity demand is on the rise. Despite the implementation of the movement order control in Malaysia since 18 March 2020, a majority of Malaysian mobile users are still connected to their 4G and 3G data[1], which shows that there is still significant demand for mobile data. Now that the governments worldwide have started easing their restrictions (including Malaysia), we would likely see that time on Wi-Fi will begin to decrease from their peak values in several countries, mostly in Europe and Asia. It is also anticipated that additional spectrum will soon be required for 5G systems in the frequency range between 6 GHz and 24 GHz. Therefore, we recommend MCMC to consider allocation of 6 GHz band in Malaysia for 5G services.
2	MCMC seeks your views and comments on the emerging technologies utilising the 6 GHz frequency band.	More spectrum is required to accommodate the mobile data traffic growth as new services and applications emerge in the near future. The usage scenarios have expanded through IMT technologies from cellular service with voice and data (3G), through broadband data services for high mobility as well as nomadic/local access (4G), to the three usage scenarios in 5G Enhanced Mobile Broadband (eMBB), Ultra-reliable and low latency communications (uRLLC) and Massive-machine type communications (mMTC). The next step for 5G would encompass existing scenarios, but will also expand into broader use cases which will require more bandwidth (i.e: 6 GHz). These use cases include: i. **Healthcare innovations**: Advanced telemedicine including tactile internet capabilities, with remote surgery and smart instruments made possible due to its speed and latency capabilities. ii. **Connected transport**: Connected vehicles to communicate with each other, the cloud, and the physical environment to create highly efficient public transport networks. iii. **Artificial Intelligence**: Rapid advances in AI and machine learning will ultimately give fully autonomous connected machines that are interoperable and communicate with any other intelligent machine. 6 GHz spectrum for 5G can also support high data rate applications including high-performance, wearable, augmented-reality and virtual-reality devices.

[1] OpenSignal, Analyzing Mobile Experience during the coronavirus pandemic: Time on Wi-Fi, 30 March 2020

		Noting the importance of allocating more spectrum for 5G, as more use cases are identified, China and Russia are setting out to use the entire 1200 MHz (5925 – 7125 MHz) for 5G. Thus, we respectfully invite MCMC to support studies for the identification of 6 GHz for IMT at the World Radiocommunication Conference 2023 (WRC-23).
3	MCMC seeks your views and comments on the frequency range within the 6 GHz frequency band that could be considered for Wi-Fi under the Class Assignment in Malaysia. Should MCMC consider allowing Wi-Fi to operate in the entire 1200 MHz (5925 MHz to 7125 MHz frequency band) or only in the 500 MHz (5925 MHz to 6425 MHz frequency band)?	DNB believes that the 6 GHz is a valuable spectrum for the expansion of 5G services as this likely to be the case for major global markets. It is an important spectrum for 5G and has the potential of global harmonisation compared to other candidate bands i.e: 4.8 GHz. A study by Coleago Consulting Ltd indicated that, in addition to the available mid-band spectrum (i.e 3.5 GHz band), a further 1,000 to 2,000 MHz of mid-bands spectrum should be made available for IMT. Without this additional spectrum, a denser network would be required and would then increase network cost to a point where it may not be possible to offer a wireless broadband service at a price point that is economically feasible. GSMA[2] has also recommended for the 6 GHz band to be allocated to 5G as this band has the potential for harmonisation on the international stage to help 5G services grow over the longer term. A new licensed 5G band within 6 GHz will be important to help 5G networks scale as adoption rises. The unique benefits of this range, including a mixture of coverage and capacity, cannot be replaced with mmWave or coverage bands. As mentioned above, China, which is one of the most successful countries in 5G deployment, will use the entire 1200 MHz for 5G/IMT. This is a large market that will drive the 5G ecosystem significantly. In this regard, we would like to recommend MCMC to allocate the full 1200 MHz (5925 – 7125 MHz) of the 6GHz band for 5G, since this band is vital for 5G and its evolution.
4	MCMC seeks your views and comments on: i. the coexistence between Wi-Fi and incumbent services (i.e. fixed service and fixed-satellite service); and ii. the potential interference mitigation between these services.	DNB notes the studies on compatibility and sharing between WLAN and the existing users of the 5925 – 6425 MHz bands (including adjacent bands) in Europe are contained in ECC Report 302. These current users include fixed links, fixed satellite, Intelligent transportation system (ITS), Urban Rail ITS, Communication-based Train Control (CBTC), radio astronomy, and UWB systems. The conclusion from ECC Report 302 shows the interference risk from WLAN devices to fixed services is very low.

[2] GSMA (March 2021), 5G Spectrum GSMA Public Policy Position, https://www.gsma.com/spectrum/wp-content/uploads/2021/04/5G-Spectrum-Positions.pdf

		ECC Report 302 also analysed the aggregate interference from Wi-Fi devices to satellite space station receivers. The analysis shows limiting the use to indoor only and/or introducing an EIRP limit for outdoor operation would mitigate the interference risks and further ensure long-term protection of FSS space stations from aggregate interference from WLAN devices in the band 5925 – 6425 MHz.
5	MCMC seeks your views and comments on the potential technical and operational conditions to be imposed if the 6 GHz 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 (AFC) system be adopted in Malaysia?	DNB is aware that the progress to certify and standardize the Automatic Frequency Coordination (AFC) system is still on-going[3]. Therefore, we recommend MCMC to keep monitoring the development of this system before making decisions.
6	What other key issues need to be considered in introducing Wi-Fi in the 6 GHz frequency range?	We are of the view that 5G services will become more pervasive and therefore, more spectrum for this technology will be required. As such, should 6 GHz be allocated for Wi-Fi, this limits the availability of spectrum which could otherwise be used for the proliferation of 5G services. In this regard, we are of the view that this band should be allocated for 5G for the long-term benefit of end users.

[3] Facebook, Cisco, Broadcom launch AFC group for 6 GHz Wi-Fi https://www.fiercewireless.com/devices/facebook-cisco-broadcom-launch-afc-group-for-wi-fi-at-6-ghz, 10 August 2021