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BY EMAIL

YBrs. DR. FADHLULLAH SUHAIMI ABDUL MALEK
Chairman
Malaysian Communications and Multimedia Commission
MCMC Tower 1, Jalan Impact, Cyber 6,
63000 Cyberjaya
Selangor Darul Ehsan
By Email : spectrumplanning@mcmc.gov.my

Dear YBrs. Dr. Fadhlullah,

MEASAT's Response towards MCMC's Public Consultation on Wireless Local Area Network (WLAN) in the 6 GHz

Reference is made to the Malaysian Communication and Multimedia Commission's (MCMC) Public Consultation paper dated 12 August 2021.

MEASAT Satellite Systems Sdn. Bhd (MEASAT) submits herewith our response to the Public Consultation as attached in Annex 1.

Thank you.

Yours faithfully
For and on behalf of
MEASAT Satellite Systems Sdn. Bhd.

Simon Cathcart
Chief Executive Officer

Annex 1 – MEASAT's Response towards MCMC's Public Consultation on Wireless Local Area Network (WLAN) in the 6 GHz

QUESTION	RESPONSE
Question 1 MCMC seeks your views and comments on the demand for spectrum for Wi-Fi in the 6 GHz frequency band.	MEASAT has no specific data on the demand for spectrum for Wi-Fi in the 6 GHz band. Nevertheless, MEASAT is supportive of initiatives to maximize the utility of spectrum resources in the manner that protects existing services and does not constrain the future development of the spectrum by incumbent FSS services to the maximum extent possible.
Question 2 MCMC seeks your views and comments on the emerging technologies utilising the 6 GHz frequency band.	MEASAT has no specific views on emerging technologies utilizing the 6 GHz frequency band.
Question 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)?	In accordance with the ITU-R Radio Regulations (RR), the 6 GHz band is allocated to Fixed Satellite Services (FSS) in the frequency range of 5925-7025 GHz. Within this range, the FSS allocation in the 6725-7025 MHz band is for Earth-to-space operations in the ITU Appendix 30B Allotment Plan, which is intended to ensure that all countries have access to spectrum and orbital resources for satellites. Hence, Wi-Fi deployment in the 6 GHz should **ensure protection to current and future users of incumbent FSS services.** At the same time, consideration of the band 6725-7025 MHz for Wi-Fi should not in any way, undermine the use of the band for FSS under the Allotment Plan. With regard the amount of spectrum to be considered, MEASAT believes that it is subject to the spectrum needs for Wi-Fi in Malaysia. At the same time, as devices and technologies proliferate fast, it will be challenging to reverse the decision once MCMC allow Wi-Fi to use the full spectrum of 6 GHz frequency band. Hence, MEASAT supports consideration of the lower 500 MHz (5925-6425 MHz) for Wi-Fi in Malaysia. With the initial roll-out of the 500 MHz spectrum, co-existence and interference scenarios with incumbent FSS services in the overlapping and adjacent frequency bands could be evaluated. Along the line, MEASAT does not oppose future consideration of the additional 700 MHz of spectrum within the range 6425-7125 MHz, subject to spectrum need, co-existence and interference studies, and that the **additional allocation does not constrain current and future users of incumbent FSS services** in this frequency range.

QUESTION	RESPONSE
Question 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	MEASAT believes that there should be sufficient studies carried out to ensure coexistence between Wi-Fi and incumbent FSS services. Based on these studies, Wi-Fi in the 6 GHz should be **deployed under appropriate technical and operational characteristics to ensure coexistence between Wi-Fi and incumbent FSS services.**
ii. the potential interference mitigation between these services.	MEASAT notes that some technical studies[1,2] have shown that, through mitigation measures such as constraining equipment to indoor deployments or higher powered outdoor deployments be subject to a database to avoid incumbents, there will not be any potential interference into FSS services in the 6 GHz band. At the same time, as a precautionary measure to further protect FSS operations from harmful interference, US has proposed that outdoor access points limit the maximum EIRP above a 30 degree elevation angle to 21 dBm.[3] Based on the above, MEASAT reiterates that, Wi-Fi deployments, particularly the high powered outdoor access points, should be based on extensive co-existence and interference studies to **verify that current and future users of incumbent FSS services will be sufficiently protected** and that **there will not be any technical or operational constrains to current or future users of incumbent FSS services**.
Question 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.	MEASAT does not oppose for Wi-Fi to be introduced under Class Assignment in the 6 GHz band **subject to current and future users of incumbent FSS services being protected.** MEASAT believes that Wi-Fi deployments based on low power indoor (LPI) access points and very low power (VLP) access points to deployed indoors or outdoors could **co-exist with current and future users of incumbent FSS services**. While MEASAT does not oppose ubiquitous deployment of Wi-Fi that operate outdoors at high-power i.e. standard power (SP) access points, such deployments should be based on extensive co-existence and interference studies to **verify that current and**

1 RKF Engineering Solutions "LLC Frequency Sharing for Radio Local Area Networks in the 6 GHz Band" (January 2018) (https://s3.amazonaws.com/rkfengineering-web/6USC+Report+Release+-+24Jan2018.pdf)

2 ECC Report 302 "Sharing and compatibility studies related to Wireless Access Systems including Radio Local Area Networks (WAS/RLAN) in the frequency band 5925-6425 MHz" (approved 29 May 2019) (https://docdb.cept.org/download/cc03c766-35f8/ECC%20Report%20302.pdf)

3 FCC Federal Register "Unlicensed Use of the 6 GHz Band" (https://www.federalregister.gov/documents/2020/05/26/2020-11236/unlicensed-use-of-the-6-ghz-band)

QUESTION	RESPONSE
	future users of incumbent FSS services will be sufficiently protected and that **there will not be any technical or operational constrains to current or future users of incumbent FSS services**.
Should part of the frequency band be limited to indoor operation?	Wi-Fi deployments based on low power indoor (LPI) access points and very low power (VLP) access points can be deployed indoors or outdoors and co-exist with incumbent FSS users. Hence, MEASAT believes that there is no need for some parts of the frequency to be limited to indoor operations for Wi-Fi deployments based on LPI and VLP access points.
Should standard power devices operating under the Automatic Frequency Coordination (AFC) system be adopted in Malaysia?	The Automatic Frequency Coordination (AFC) system is required for deployment of higher powered outdoor standard power access points. While system is adopted by the US to ensure that Wi-Fi devices protect fixed services (FS) operating in the same band using a database of licensed FS locations and frequencies, this system is not focused to provide protection against aggregate interference into the FSS. While MEASAT believes that there should not be any potential interference into FSS in the 6 GHz, this theory will need to be further investigated and verified. For example, based on current studies, precautionary measures are still undertaken to ensure further protection to FSS operations, in which the US has proposed that outdoor access points limit the maximum EIRP above a 30 degree elevation angle to 21 dBm. MEASAT believes that low power indoor (LPI) access points and very low power (VLP) access points deployed indoors or outdoors to operate across the whole 5925-6425 MHz band will speed up the deployment of the devices that do not require the complexity of the AFC implementation. Having said the above, MEASAT does not oppose the deployment of standard power Wi-Fi access points operating under the AFCsystem to be adopted in Malaysia. However, this should be based on extensive co-existence and interference studies to ensure that **current and future users of incumbent FSS services will be sufficiently protected** and that **there will not be any technical or operational constrains to current or future users of incumbent FSS services**.
Question 6 What other key issues need to be considered in introducing Wi-Fi in the 6 GHz frequency range?	MEASAT seeks that the consideration to introduce Wi-Fi in the 6 GHz band ensures that **current and future users of incumbent FSS services are sufficiently protected** and that **there will not be any technical or operational constrains to current or future users of incumbent FSS services**. There should be mechanisms to immediately eliminate interference (if any) to ensure **no impact to the operations of the incumbent FSS services.**