Template for Response

Dear MCM Representatives,

Wi-Fi Alliance is a global, non-profit industry association of over 800 leading companies from dozens of countries devoted to connecting everyone and everything everywhere. With technology development, market building, and regulatory programs, Wi-Fi Alliance has enabled widespread adoption of Wi-Fi worldwide. Wi-Fi enabled connectivity has become critical to national communications infrastructure, key components of the economic growth and catalysts for technological innovation. Wi-Fi Alliance is committed to maintain and expanding connectivity for billions of people worldwide.

Radio Local Area Networks (RLANs) using Wi-Fi standards have become increasingly important in connecting people and devices. Hundreds of millions of people across Africa rely on Wi-Fi to connect their billions of devices every day. Studies show that Wi-Fi is the primary means for delivering internet connectivity. For example, in 2017, Wi-Fi delivered more than half (51.2%) of all the internet traffic and 70%-80% of the mobile traffic via offload.[1]

Today Wi-Fi supports high-resolution video streaming, Wi-Fi calling, smart home monitoring, hotspot access, automation of city-wide services, residential, AR/VR applications, and seamless roaming. This central infrastructure role will only increase in the future, since Wi-Fi technology will be core component in support of Fifth Generation wireless ("5G") networks, with ultra-dense, high-speed connections to wireless and wired networks, making end-to-end communications seamless and ubiquitous.[2/] Wi-Fi will continue to deliver mission critical connectivity and will carry a bulk of the world's data traffic as 5G networks are deployed. Wi-Fi 6, based on the IEEE 802.11ax standard, will bring increased access and capabilities, while WiGig enhancements, based on the IEEE 802.11ad/ay standards at the 60 GHz band, will deliver faster speeds and longer ranges providing connectivity for many advanced use cases in connected homes, connected enterprises, IoT, smart cities, carrier services, and public venues.

All of this traffic over Wi-Fi-enabled and other RLAN devices requires spectrum capacity. Despite ever increasing demand, however, the spectrum available for RLANs has not changed since WRC-03. Wi-Fi industry is concerned that without improved spectrum access, RLAN users will begin to experience degradation in performance. This problem will be particularly acute in high-density RLAN (Wi-Fi) deployments which are prevalent in many metropolitan areas in Malaysia. With that in mind, Wi-Fi industry seeks MCMC support on the following WRC-19 issues.

[1] Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2017–2022 at https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white-paper-c11-738429.pdf

[2/] *See*, *e.g.*, Wi-Fi Alliance, *Next Generation Wi-Fi: The future of connectivity*, or Wireless Broadband Alliance, *The Role of Wi-Fi and Unlicensed Technologies in 5G*

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions
Working Party 2: Broadband Applications in the Mobile Service		
5.	1.13	**WRC-19 Agenda Item 1.13 (Item J: 66-71 GHz)** The frequency band 66-76 GHz is included under Resolution **238 (WRC-15)** for sharing and compatibility studies. During the TG 5/1 effort, some administrations expressed support for IMT identification in the 66-71 GHz portion of this band. Wi-Fi industry considers this approach as highly problematic. As noted in the draft CPM-19 report, very few sharing and compatibility studies have been carried out on the 66-71 GHz band.[3] This can be explained by the fact that many countries have identified this and adjacent bands for implementation of license-exempt technologies (e.g. IEEE 802.11ad/ay (WiGig)). In the United States, for example, the FCC decided to maintain the unlicensed use of the 64-71 GHz band and even to expand these operations on to aircraft in flight.[4] Similarly, UK Ofcom adopted regulations for license-exempt operations in the 57-71 GHz band. And, importantly, ITU-R confirmed plans for implementation of the Multiple Gigabit Wireless Systems (MGWS) in this frequency band.[5] The MGWS such as WiGig offer low-latency connectivity that expands the Wi-Fi experience for virtual reality, multimedia streaming, gaming, wireless docking, and enterprise applications requiring high speed, data-intensive connections. These systems need access to the uncongested 60 GHz frequency band with wide channels to transmit data efficiently at multi-gigabit per second speeds. Users benefit from expanded capacity and focused transmission between devices to reduce interference, even in crowded environments. Given nascent state of the 5G ecosystem in the 60-70 GHz frequency range, it is difficult to predict, prior to WRC-19, how technologies, spectrum needs, market demands and other factors will evolve. A recent study projects that by the year 2022, annual chipset shipments based on IEEE 802.11ad/ay protocols would exceed 1.5 billion. There is no need to add an IMT identification to the existing co-primary allocation to the mobile service in 66-71 GHz; the existing allocation is sufficient to enable growth of both IEEE and 3GPP technologies in license-exempt spectrum.

[3] *See* Draft CPM 19-2 Report at Paragraph 2/1.13/3.2.9

[4] Use of Spectrum Bands Above 24 GHz for Mobile Radio Services Second Report and Order, Second Further Notice of Proposed Rulemaking, Order on Reconsideration, and Memorandum Opinion and Order, GN Docket No. 14-177

[5] *See* ITU-R Doc. 5-1/32, Recommendation ITU-R M.2003-2 and Report ITU-R M.2227

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions
		Wi-Fi industry urges the MCMC to take a technology neutral approach – ***support NOC for the band 66-71 GHz CPM-19 Report Method J1 (Section 2/1.13/4.10.1)***.
6.	1.16	**WRC-19 Agenda Item 1.16 (5 150-5 250 MHz)** RLANs using IEEE 802.11 standards (Wi-Fi) have proven to be a tremendous success in providing affordable and ubiquitous broadband connectivity in the ATU region. Introduced by some administrations in limited spectrum in the 2.4 GHz band and subsequently expanded into the 5 GHz band, today, RLANs are integral component of the Africa's telecommunications infrastructure. The WRC-03, recognizing significant demand for RLANs worldwide, designated a limited amount of spectrum for RLANs in 5 GHz. RLAN use in 5250-5350 MHz and 5470-5725 MHz spectrum is subject to the dynamic frequency selection (DFS) constraint. The DFS constraint, albeit necessary, reduces spectrum access and raises equipment cost and complexity for RLAN implementation. The current Radio Regulations provisions, adopted at WRC-03, restrict the band 5150-5250 MHz to indoor use only. Over the last 15 years (since WRC-03), however, the requirements for RLAN outdoor deployments have evolved, for example: • Smart cities and communities;[6] • Mobile Data – volume of mobile data traffic offloaded to Wi-Fi significantly exceeds traffic carried (remaining) on cellular networks;[7] • Locations which are increasingly expected to offer ubiquitous Wi-Fi access including outdoor areas such as sports arenas, municipal/private networks, parks, and other high traffic areas as well as indoor areas such as shopping malls, airports, hotels, restaurants, office buildings and schools; • Sensors and connectivity for public transport, automotive, utilities, etc. rely on Wi-Fi connectivity; • Internet of Things (IoT) technologies entail both indoor and outdoor deployments; • Connected wearables and other consumer applications rely on Wi-Fi to support various use cases. The lack of adequate spectrum particularly for RLAN outdoor deployments threatens to degrade performace and limit conectivity for billions of consumers. Wi-Fi industry urges the MCMC to support revisions to Resolution **229 (Rev.WRC-12)** are proposed in order to enable outdoor RLAN operations including possible associated conditions for new e.i.r.p. limits while

[6] https://www.itu.int/en/ITU-T/ssc/Pages/default.aspx
[7] https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/vni-hyperconnectivity-wp.html

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions
		addressing the protection of incumbent services – ***support CPM-19 Report Method A2*** **- Revision to Resolution 229 (Rev.WRC-12) to enable outdoor RLAN operations including possible associated conditions for new e.i.r.p. limits (Section 2/1.16/4.1.2).**
8.	9.1 (Issue 9.1.5)	**WRC-19 Agenda Item 9.1 Issue 9.1.5** WRC-03 designated 5 250-5 350 MHz and 5 470-5 725 MHz frequency bands for use by RLANs. As part of that decision, WRC-03 adopted RR Nos. **5.447F** and **5.450A** provision specifying that RLANs must protect radiolocation service described in Recommendations ITU-R M.1638-0 and ITU-R M.1849-0 and that radiolocation and EESS could not impose more stringent protection requirements on WAS/RLANs. The actual coexistence requirement between RLAN and the radiolocation service is regulated by No. **5.446A** and associated Resolution **229** (Rev. WRC 12) and is premised on application of the Dynamic Frequency Selection (DFS) technique. The listen-before-talk approach of the DFS is the only practical method for RLANs to avoid operations on frequencies in use by radars. Since WRC-03, along with growing demand for RLAN connectivity, there has been evolution in radar technology, with new fast-frequency-hopping and bi-static radars introduced in to the 5 GHz bands. Significant amount of work has been carried out to study coexistence between RLANs and newly introduced radar systems which operate in the 5250-5850 MHz range. In general, the studies conclude that DFS is *the only realistic mitigation technique identified to protect radars from RLAN interference, but that it cannot protect the fast frequency hopping and bi-static radars. In other words, the listen-before-talk, DFS technique cannot protect radars that are specifically designed so as not to be heard.* Nonetheless, some radar proponents insist that existing international regulation must be modified at WRC-19 to require RLANs to protect *all* radar systems in the band, including those that use bi-static and advanced fast frequency hopping techniques. Under the radar proponents' logic, RLANs must protect the radars that they cannot sense. Imposing such contradictory regulatory requirement would effectively preclude RLAN operations in the 5250-5350 MHz and 5470-5725 MHz bands. With 95% of Wi-Fi devices shipped in 2021 expected to support 5 GHz, this is unacceptable. Wi-Fi industry urges the MCMC administrations to support approach that preserves RLAN access to the much used and needed spectrum in the 5 GHz band – **support Draft CPM-19 Report, Approach B (Section 2/9.1.5/3.1.2).**
31.	10	Wi-Fi Alliance wishes to convey information and industry views for consideration of WRC-19 Agenda Item 10 proposal(s) seeking IMT identification in parts of the 5925-7125 MHz frequency range ("6 GHz band"). Wi-Fi Alliance urges the MCMC to oppose such proposals.

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions
		Regulatory Assessment The 5925-7125 MHz frequency range is allocated on co-primary basis to the Mobile, Fixed and Fixed-Satellite services. Currently, multiple terrestrial and/or satellite networks operate in the 6 GHz band across the APAC region. The APT administration may wish to consider that a Regional proposal for an IMT identification in the 6 GHz band would signal the administrations' intention to curtail viability and growth of the existing terrestrial and satellite deployments in the 6 GHz band. Importantly, under the existing ITU allocations, any administration already has the regulatory flexibility to implement a variety of mobile applications, including IMT, consistent with their national priorities. A WRC-23 agenda item to identify 6 GHz band for IMT would only detract from this flexibility. In fact, such WRC-23 agenda item would be disruptive and counterproductive because it would: • create regulatory uncertainty pending WRC-23 decisions and, thereby, impede implementation of connectivity solutions in the 6 GHz band; • result in additional regulatory constraints on mobile deployments in the 6 GHz band; • expend limited ITU-R and administrations' resources on unnecessary 6 GHz sharing studies in preparation for WRC-23; • contradict ongoing efforts to introduce unlicensed/RLAN systems and not achieve international spectrum harmonization. With regard to the last point, it is important to emphasize that countries in other regions have initiated efforts to expand RLAN access to the 6 GHz band. For example, the U.S. Federal Communication Commission proposed to authorize expanded unlicensed operations throughout the 6 GHz band (see 6 GHz NPRM). Similarly, the European Commission has directed CEPT to develop regulatory solutions for RLANs (see EC Mandate). These efforts are focused on developing regulatory solutions that would expand opportunities for low-cost wireless connectivity (i.e., RLANs) in the 6 GHz band while ensuring that the existing satellite and terrestrial services continue to thrive (see for example: ECC Report 302). **Conclusion** Wi-Fi Alliance respectfully asks MCMC to consider prioritizing existing, technology neutral Mobile service allocations in the 6 GHz band and oppose any attempt to modify existing allocation in this band at WRC-19 or WRC-23..