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**IEEE P802.18**  
**Radio Regulatory Technical Advisory Group (RR-TAG)**

Draft response to Vietnam MIC's consultation re lower 6 GHz band

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Author(s):

Name	Company	Address	Phone	email
Edward Au	Self			<a href="mailto:edward.ks.au@gmail.com">edward.ks.au@gmail.com</a>
Gaurav Patwardhan	HPE			<a href="mailto:gaurav.patwardhan@hpe.com">gaurav.patwardhan@hpe.com</a>

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This document contains a proposed response to Vietnam Ministry of Information and Communications (MIC)'s consultation "Draft Circular amending and supplementing a number of articles of Circular No. 08/2021/TT-BTTTT dated October 14, 2021 of the Minister of Information and Communications stipulating the List of radio equipment exempted from radio frequency use licenses, technical conditions and accompanying exploitation".

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7 Re: Consultation “Draft Circular amending and supplementing a number of articles of Circular  
8 No. 08/2021/TT-BTTTT dated October 14, 2021 of the Minister of Information and  
9 Communications stipulating the List of radio equipment exempted from radio frequency use  
10 licenses, technical conditions and accompanying exploitation”

11  
12 Dear Respected Officer,

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14 IEEE 802 LAN/MAN Standards Committee (LMSC) thanks Ministry of Information and  
15 Communications (MIC) for providing an opportunity to comment on the consultation “Draft  
16 Circular amending and supplementing a number of articles of Circular No. 08/2021/TT-BTTTT  
17 dated October 14, 2021 of the Minister of Information and Communications stipulating the List of  
18 radio equipment exempted from radio frequency use licenses, technical conditions and  
19 accompanying exploitation”.

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21 IEEE 802 LMSC is a leading consensus-based open standards development committee for  
22 networking standards that are used by industry globally. It produces standards for networking  
23 devices, including wired and wireless local area networks (“LANs” and “WLANs”), wireless  
24 specialty networks (“WSNs”), wireless metropolitan area networks (“Wireless MANs”), and  
25 wireless regional area networks (“WRANs”). Technologies produced by implementers of our  
26 standards are a critical element for all networked applications today.

27  
28 IEEE 802 LMSC is a committee of the IEEE Standards Association and of Technical Activities,  
29 two of the Major Organizational Units of the IEEE. IEEE has about 400,000 members in over 160  
30 countries and its core purpose is to foster technological innovation and excellence for the benefit  
31 of humanity. IEEE is also a major accredited standards development organization whose standards  
32 are recognized worldwide. In submitting this document, IEEE 802 LMSC acknowledges that other  
33 components of IEEE Organizational Units may have perspectives that differ from, or compete  
34 with, those of IEEE 802 LMSC<sup>1</sup>.

35  
36 Please find below the responses of IEEE 802 LMSC to this consultation.

37  
38 ***It is the right time to authorize Wi-Fi devices to operate in 5925 MHz to 6425 MHz in Vietnam***

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40 IEEE 802 LMSC commends MIC’s effort in expanding the operation of Wi-Fi devices, based on  
41 IEEE 802.11 technologies, to the 5925 MHz to 6425 MHz frequency band (a.k.a., the lower 6 GHz  
42 band). As recognized in this proceeding, many countries in Asia Pacific region have authorized  
43 the lower 6 GHz band for licence exempt operation at the proposed or similar transmit power  
44 limits. Adopting similar spectrum access rules will create economies of scale and produce a robust  
45 equipment market, benefitting Vietnam’s businesses, consumers, as well as increasing the societal  
46 benefits.

47  
48 In the proceedings, MIC proposes to allow Wi-Fi devices to operate between 5925 MHz and 6425  
49 MHz using no greater than 25 mW outdoors (a.k.a., very low power (VLP) mode) or no greater  
50 than 200 mW indoors (a.k.a., low power indoor (LPI) mode) without causing harmful interference  
51 to existing authorized communications and without protection from any interference caused by

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<sup>1</sup> This document solely represents the views of IEEE 802 LMSC and does not necessarily represent a position of either IEEE or the IEEE Standards Association or IEEE Technical Activities.

52 existing authorized communications. IEEE 802 LMSC supports the authorization of Wi-Fi devices  
53 operating at the proposed power limits between 5925 MHz and 6425 MHz both indoors and  
54 outdoors.

55

56 In addition, we would like to respectfully ask MIC to clarify on the condition for the outdoor  
57 operation, specifically on the whether the Wi-Fi devices are required to operate in a fixed location.  
58 In other geographies, there is no such requirement for the Wi-Fi devices to be operated in a fixed  
59 location<sup>2</sup>.

60

61 ***Initiate authorization proceedings for standard power RLAN under supervision of AFC***

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63 IEEE 802 LMSC recommends MIC to consider initiating proceedings to authorize Standard Power  
64 (SP) mode under supervision of an Automated Frequency Coordination (AFC) system in the 6  
65 GHz band. SP mode enables Wi-Fi operation at higher power than both the VLP and the LPI  
66 modes, to optimally utilize the 6 GHz spectrum. As MIC plans to authorize VLP and LPI modes  
67 in the 6 GHz band, IEEE 802 LMSC kindly requests MIC to consider initiating the process to  
68 authorize SP mode and certification of AFC controlled devices (SP access points or fixed clients)  
69 and AFC systems.

70

71 AFC technology is used to protect incumbent services during outdoor and indoor operation at SP  
72 level for Wi-Fi operation. IEEE 802 LMSC believes that an AFC system can provide effective  
73 automated spectrum sharing to enable essential Wi-Fi technology applications and use cases not  
74 only for outdoor operation but also indoor operation for the SP level in the 6 GHz band.

75

76 The USA<sup>3</sup> and Canada<sup>4</sup> have already authorized SP operating mode and started certification of  
77 AFC systems. The certification process for AFC systems and devices is based on industry  
78 developed recommended compliance specifications<sup>5,6</sup>. Many AFC devices and fixed client devices  
79 are already certified.

80

81 IEEE 802 LMSC notes the presence of different types of incumbent services operating in 6 GHz  
82 band in Vietnam. Our understanding is that existing AFC systems are designed with flexibility  
83 built-in specifically to enable an AFC system to be customized based on local spectrum regulatory  
84 requirements. Therefore, with proper consideration of protection criteria for the existing incumbent  
85 services, we believe that AFC systems can properly implement the frequency coordination and  
86 maximum allowable power settings for AFC-enabled devices. As an example, in the USA, AFC  
87 systems determine frequency and channel availability and maximum permissible power levels for  
88 AFC devices considering incumbent fixed services and radio astronomy services. AFC systems  
89 already take into account neighboring country incumbent services at the country border.

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<sup>2</sup> See 47 CFR §§ 15.407 (d)(8), the Code of Federal Regulations, Office of the Federal Register, United States of America, <https://www.ecfr.gov/current/title-47/chapter-I/subchapter-A/part-15/subpart-E/section-15.407> [accessed: 25 November 2024]. “Very low power devices may not employ a fixed outdoor infrastructure. Such devices may not be mounted on outdoor structures, such as buildings or poles.”

<sup>3</sup> See Federal Communications Commission: OET announces approval of seven 6 GHz band automated frequency coordination systems for commercial operation and seeks comment on C3 Spectra’s proposed AFC system, <https://docs.fcc.gov/public/attachments/DA-24-166A1.pdf> [accessed: 25 November 2024].

<sup>4</sup> See Innovation, Science and Economic Development Canada: List of designated Dynamic Spectrum Access System Administrators (DSASAs), Automated Frequency Coordination System Administrators (AFCSAs), issue 1 of DBS-06, <https://ised-isde.canada.ca/site/certification-engineering-bureau/en/node/116> [accessed: 25 November 2024].

<sup>5</sup> See: Wi-Fi Alliance: 6 GHz AFC resources, Specifications, test plans, and training modules to enable implementation of the 6 GHz standard power devices under AFC system control, <https://www.wi-fi.org/discover-wi-fi/6-ghz-afc-resources> [accessed: 25 November 2024].

<sup>6</sup> See Wireless Innovation Forum: Specifications, <https://6ghz.wirelessinnovation.org/baseline-standards> [accessed: 25 November 2024].

91 AFC systems are designed to automatically calculate and make available, to AFC devices,  
92 available frequencies and corresponding permissible transmit power levels. AFC systems are  
93 required to use the updated incumbent system database to keep the calculations and frequency  
94 availability up to date as 6 GHz incumbent links are changed. This means that incumbent services  
95 are protected from harmful interference by AFC systems, and that any expansion of such  
96 incumbent services over time can be achieved without a need to redesign the AFC systems.

97  
98 ***Initiate authorization proceedings for expanding the frequency allocation for Wi-Fi devices to***  
99 ***operate in the 6425 MHz to 7125 MHz band***

100  
101 In considering further spectrum allocation in the 6425 MHz to 7125 MHz frequency band, IEEE  
102 802 LMSC respectfully asks MIC to consider the following points.

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104 A growing number of countries, including Argentina, Brazil, Canada, Saudi Arabia, South Korea,  
105 and the USA have already allocated the entire 6 GHz band (i.e., 5925 MHz to 7125 MHz) for  
106 licence exempt operation.

107 In January 2024, Wi-Fi Alliance introduced<sup>7</sup> Wi-Fi CERTIFIED 7™ based on the IEEE Std  
108 802.11be-2024<sup>8</sup>. IEEE 802.11be introduces advanced features including channel bandwidths of up  
109 to 320 MHz, multiple resource units to a single station, multi-link operation that utilizes multiple  
110 links across frequency bands, enhanced quality of service (QoS), improved Target Wake Time,  
111 and improved spectrum management using spectrum puncturing to improve coexistence with in-  
112 cumbents effectively and efficiently. With Wi-Fi 7 products already in the market, Wi-Fi deploy-  
113 ments are going through a second-generation upgrade in the entire 6 GHz band globally<sup>9</sup>. Of par-  
114 ticular relevance is the multi-link operation feature which when used in the 6 GHz band, achieves  
115 and exceeds the performance expectations of Wi-Fi 7. IEEE 802.11be's global 6 GHz channeliza-  
116 tion is designed to accommodate multiple 160 MHz and 320 MHz channels throughout the 5925  
117 MHz to 7125 MHz frequency band, where available. MIC's proposed designation of 500 MHz of  
118 the 6 GHz band from 5925 MHz to 6425 MHz for Wi-Fi operation provides for only one contigu-  
119 ous 320 MHz channel, while the 5925 MHz to 7125 MHz frequency band would allow three such  
120 channels to support Gigabit connectivity in Vietnam.

121 **Conclusion**

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123 IEEE 802 LMSC thanks MIC for the opportunity to provide this submission and respectfully  
124 requests to consider:

- 125 • providing clarification on the use of Wi-Fi devices outdoor in the 5925 MHz to 6425 MHz  
126 frequency band;
- 127 • initiating authorization proceedings for standard power RLAN under supervision of AFC;

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<sup>7</sup> See Wi-Fi Alliance: Wi-Fi Alliance® introduces Wi-Fi CERTIFIED 7™, <https://www.wi-fi.org/news-events/newsroom/wi-fi-alliance-introduces-wi-fi-certified-7> [accessed: 25 November 2024].

<sup>8</sup> See IEEE Approved Draft Standard for Information technology--Telecommunications and information exchange between systems Local and metropolitan area networks--Specific requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications Amendment: Enhancements for Extremely High Throughput (EHT), <https://standards.ieee.org/ieee/802.11be/7516> [accessed: 25 November 2024]. With introduction of 320 MHz channel bandwidth, Wi-Fi 7 doubles throughputs relative to Wi-Fi 6E and significantly improves latency for Extended Reality (XR), bringing determinism through enablement of Multi-Link Operation (MLO) over multiple bands in 2.4 GHz, 5 GHz, and 6 GHz bands. Wi-Fi 7 also provides higher efficiency, relative to Wi-Fi 6E, through offering of 4096 QAM. In addition, spectrum puncturing improves flexibility in utilizing spectrally efficient wide channel bandwidth, e.g., 160 MHz and 320 MHz, while protecting incumbent operation in the band.

<sup>9</sup> See Wi-Fi Alliance: Wi-Fi 7 market momentum: Wi-Fi 7 is here – is your network ready?, <https://www.wi-fi.org/beacon/chris-hinsz/wi-fi-7-market-momentum-wi-fi-7-is-here-is-your-network-ready> [accessed: 25 November 2024].

- 128       • initiating authorization proceedings to authorize expanded use of Wi-Fi devices operation  
129           in the 6425 MHz to 7125 MHz frequency band.

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131   Respectfully submitted,

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133   By: /s/.

134   James Gilb

135   IEEE 802 LAN/MAN Standards Committee Chairman

136   em: gilb\_ieee@tuta.com