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

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| Draft response to FCC NOI Reply Comments |
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This document drafts a proposed Reply Comments to the FCC NOI, Promoting the Development of Positioning, Navigation, and Timing Technologies and Solutions (WT Docket No. 25-110)

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Electronic filing May 1, 2025

Re: WT Docket No. 25-110.

Dear Secretary,

IEEE 802 LAN/MAN Standards Committee (LMSC) thanks the Wireless Telecommunications Bureau and the Office of Engineering and Technology of the Federal Communications Commission for issuing a Notice of Inquiry on Promoting the Development of PNT Technologies and Solutions and for the opportunity to provide feedback on this important topic.

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

IEEE 802 LMSC is a committee of the IEEE Standards Association and of Technical Activities, two of the Major Organizational Units of the IEEE. IEEE has about 400,000 members in over 160 countries and its core purpose is to foster technological innovation and excellence for the benefit of humanity. IEEE is also a major accredited standards development organization whose standards are recognized worldwide. In submitting this document, IEEE 802 LMSC acknowledges and respects that other components of IEEE Organizational Units may have perspectives that differ from, or compete with, those of IEEE 802 LMSC. Therefore, this submission should not be construed as representing the views of IEEE as a whole[[1]](#footnote-1).

**Discussion: The 902 MHz - 928 MHz frequency band is extensively used by the Part 15 devices, including IEEE 802.11ah[[2]](#footnote-2)-based Wi-Fi HaLow and IEEE 802.15.4[[3]](#footnote-3)-based Wi-SUN FAN, to enable a thriving IoT ecosystem**

IEEE 802 standards-based devices, specifically IEEE 802.11ah-based Wi-Fi HaLow and IEEE 802.15.4-based Wi-SUN Field Area network (FAN),have been operating in the 902 MHz to 928 MHz frequency band (collectively termed as 900 MHz) under Part 15 rules, with applications including door entry systems, environmental sensors, fire and security alarms, smart meters, smart-parking devices, smart signs, streetlights, and structural integrity sensors. As an example, there are estimated over 120 million smart electric meters[[4]](#footnote-4) deployed across the North America.

Sub-1 GHz frequency has better penetration capabilities due to longer range and cleaner propagation spectrum, which allows IoT sensors and low power devices to operate more efficiently. This band is necessary for proper coverage since there is no alternative spectrum available for the Wi-Fi HaLow and Wi-SUN FAN devices currently occupying this band.

In addition to the IEEE 802 standards-based technologies deployed as Wi-Fi HaLow and Wi-SUN FAN, as well as LPWAN technologies such as SigFox and LoRa deployments, there are millions of proprietary systems deployed in large scale outdoor applications at the 900 MHz band, such as agriculture, electric, gas and water meters (AMR), potable water towers, streetlights, Utility SCADA systems, oil and gas processing and distribution monitoring, and wastewater monitoring and processing stations.

In addition to these outdoor networks, in a myriad of wireless consumer products such as cordless phones, intercoms, sensors, toys, garage door openers, operate in the 900 MHz band under the Part 15 rules.

**Discussion: NextNav’s 5G Operation will cause excessive Interference to Part 15 Devices in the Lower 900 MHz Band.**

IEEE 802 is in favor of the development of complementary PNT technologies and solutions. The NOI also expressed interest in “exploring options that rely or incorporate solutions provided by NextNav Inc”. The RAIN Alliance, LoRa Alliance, Wi-Fi Alliance, Wi-SUN Alliance, and Z-Wave Alliance provided comments.[[5]](#footnote-5) In the Executive Summary of the RAIN Alliance, LoRa Alliance, Wi-Fi Alliance, Wi-SUN Alliance, and Z-Wave Alliance the comment states, “The impact on outdoor Part 15 devices is likely to be severe …”. As stated in previous discussion, many of the use cases are for outdoor.

The Wi-Fi Alliance also provided comments[[6]](#footnote-6) which included the attachment, “Impact of 5G Network Transmissions on Wi-Fi HaLow Performance in the 902-928 MHz Band”. From page 10, “The results clearly show that 5G operations in the Lower 900 MHz Band will effectively block the functionality of Wi-Fi HaLow devices across large areas”. As stated in the Executive Summary of the attachment, this includes outdoor and indoor use cases as well as overlapping frequencies and adjacent frequencies.

***Summary: Options that rely or incorporate solutions provided by NextNav Inc will cause massive detrimental effects.***

IEEE 802 is in favor of the development of complementary PNT technologies and solutions. The commission should consider impacts on current users and services and reject the option provided by NextNav.

Respectfully submitted

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1. This document solely represents the views of IEEE 802 LMSC and does not necessarily represent a position of either the IEEE or the IEEE Standards Association or the IEEE Technical Activities. [↑](#footnote-ref-1)
2. IEEE Std 802.11ah-2016, IEEE 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 2: Sub 1 GHz License Exempt Operation [↑](#footnote-ref-2)
3. IEEE: IEEE Std 802.15.4-2024, IEEE Standard for Low-Rate Wireless Networks [↑](#footnote-ref-3)
4. Information derived from Guidehouse Global AMI Tracker 4Q23 research data. [↑](#footnote-ref-4)
5. In re: Promoting the Development of PNT Technologies and Solutions NOI, Docket No. 25-110, Comments of RAIN Alliance, LoRa Alliance, Wi-Fi Alliance, Wi-SUN Alliance, and Z-Wave Alliance (Apr. 28, 2025) [hereinafter 5A Comments], https://www.fcc.gov/ecfs/document/1042817716000/1 [↑](#footnote-ref-5)
6. In re: Promoting the Development of PNT Technologies and Solutions NOI, Docket No. 25-110, Comments of Wi-Fi Alliance (Apr. 28, 2025) [hereinafter WFA Comments], https://www.fcc.gov/ecfs/document/10428132781589/1 [↑](#footnote-ref-6)