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

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| Draft response to FCC NOI Reply Comments |
| Date: 2025-04-22 |
| Author(s): |
| Name | Company | Address | Phone | email |
| Dave Halasz | Morse Micro |  |  | dave.halasz@morsemicro.com |
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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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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).

Please find below the IEEE 802 LMSC’s reply comments on this NOI.

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”. (Cite the NOI) The reply comments below are regarding the solution provided by NextNav, Inc.

**NOTE: This is from the comments on the NextNav petition.**

**Discussion: The 902 MHz - 928 MHz frequency band is extensively used by the Part 15 devices, including IEEE 802.11ah-based Wi-Fi HaLow and IEEE 802.15.4-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[[2]](#footnote-2) 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.

Approval of the changes petitioned by NextNav will potentially disrupt the operation of the millions of currently deployed IoT devices and require cities and towns to spend millions of dollars to migrate their existing systems to different technologies. This is a heavy and seemingly unnecessary burden to urban and rural communities both financially and organizationally in replacing existing systems which are currently meeting application needs. For some of these applications, there may not even be a viable alternative available.

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. These products may not be able to coexist with the proposed NextNav deployments.

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

NextNav submitted a 5G NR and Unlicensed Part 15 Technologies in the Lower 900 MHz Band, Coexistence Analysis (Cite <https://www.fcc.gov/ecfs/document/102280525327052/1>) which has many flaws. (Cite Comments on the NOI which refute the analysis)

A basic flaw is that NextNav did not take into spectrum sharing mechanisms in Unlicensed Part 15 Technologies such as Listen-Before-Talk. And NextNav’s 5G Operation lacks coexistence mechanisms such as Listen-Before-Talk.

***Expand here on how Wi-Fi HaLow would be blocked by 5G Operation.***

Respectfully submitted

By: /ss/.

James Gilb

IEEE 802 LAN/MAN Standards Committee Chairman

em: gilb\_ieee@tuta.com

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. Information derived from Guidehouse Global AMI Tracker 4Q23 research data. [↑](#footnote-ref-2)