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Radio Regulatory Technical Advisory Group (RR-TAG)

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| Proposed Reply Comment to FCC NPRM: Cybersecurity Labeling for Internet of Things |
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This document drafts a proposed reply comment to FCC NPRM: Cybersecurity Labeling for Internet of Things.

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Electronic filing [September 26, 2023]

Erika Olson

Acting Chief Cybersecurity and Communications Reliability Division

Public Safety and Homeland Security Bureau

Federal Communications Commission

Washington, DC

Re: Reply comment to NPRM: Cybersecurity Labeling for Internet of Things

Dear Acting Chief Olson,

IEEE 802 LAN/MAN Standards Committee (“IEEE 802 LMSC”) thanks Federal Communications Commission for issuing the consultation on Notice of Proposed Rulemaking (“NPRM”): Cybersecurity Labeling for Internet of Things and for the opportunity to provide reply comments.

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 world-wide. 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).

**IEEE 802 wireless technology development for Internet of Things devices**

[Need to get feedback from 802 IoT and security experts. Add 1-2 paragraphs on IEEE 802 related standards on IoT (802.11ah) and security (802.1X/WEP/802.11i?)].

IEEE 802 wireless technologies such as IEEE 802.11 and IEEE 802.15 have been instrumental in enabling a rich diversity of IoT devices. This diversity includes, but is not restricted to, smart meters, smart lighting, smart plugs, switches and controls, sensor devices, locks, home appliances, and video cameras. In addition, many IoT devices combine sensors with cameras to support applications such as smart doorbells, and security cameras with motion detection or smoke detection, etc.

The IEEE 802.11ah-2016 standard[[2]](#footnote-2), known as Wi-Fi HaLow in the marketplace, is an amendment to the IEEE 802.11 standard that specifies mechanisms for operation of Wi-Fi in sub 1 GHz bands. It was developed with long range, low power sensor and Internet of Things (IoT) networks in mind. Agriculture is just one of the potential applications[[3]](#footnote-3). It also introduced Target Wake Time (TWT), which allows long sleeping devices to negotiate a time for the device to be active and which may also be used by Wi-Fi technologies in other bands, for example by the IEEE 802.11ax-2021 standard[[4]](#footnote-4), known as Wi-Fi 6, and the forthcoming IEEE P802.11be, known as Wi-Fi 7, to optimize power consumption per device. Of particular note, the same robust IEEE 802.11 security standards that are found in consumer smartphone and PC products are available to IEEE 802.11 based IoT devices.

The IEEE 802.15.4-2020 standard[[5]](#footnote-5) supports data communication, location discovery and device ranging. Some examples of the IoT devices which implement IEEE 802.15.4 technologies are TV remote controls, lighting, windows, door locks, heating and air conditioning systems, alarm systems, and remote medical monitoring.

IEEE 802 LMSC applauds the Commission’s NPRM that proposes a cybersecurity labeling program for IoT. IEEE 802 LMSC recognizes the Commission’s goal of improving consumer confidence and understanding of the security of their connected devices and supports proposed voluntary cybersecurity labeling program for such devices.

Please find below the IEEE 802 LMSC’s reply comments on the NPRM focusing on cybersecurity labeling for unlicensed wireless IoT devices.

**Industry-led Cybersecurity Standards**

IEEE 802 LMSC supports the Commission’s recognition of industry-led development, implementation, and testing of cybersecurity standards such as [IEEE 802.1X, 802.11i,] and Wi-Fi CERTIFIED WPA3 program[[6]](#footnote-6) led by Wi-Fi Alliance [reference to WFA comment on NPRM][[7]](#footnote-7).

IEEE 802 LMSC agrees with Wi-Fi Alliance that there is no need to convene a Commission-sponsored group to develop standards to avoid replicating the work already completed or those projects underway by industry-led standards bodies. IEEE 802 LMSC also supports the proposal by Wi-Fi Alliance encouraging the Commission to evaluate cybersecurity standards developed by approved or accredited industry organizations for adoption under the IoT Cybersecurity Labeling Program.

**Scope of Cybersecurity Labeling**

IEEE 802 LMSC believes that the scope of the proposed cybersecurity labeling program should be carefully studied and limited to IoT consumer products. More specifically, IEEE 802 LMSC proposes to adopt NIST Recommended Criteria for Cybersecurity Labeling for Consumer Internet of Things (IoT) Products[[8]](#footnote-8) and exclude common general purpose computing equipment (e.g., personal computers, smartphones) as well as general internet and networking infrastructure (e.g., internet routers and switches).

In addition, to meet the goal of improving consumer confidence and understanding of the security of connected devices, IEEE 802 LMSC recommends to consider focusing on labeling IoT end products and exclude other components such as modules, gateways, backends, or applications.

**Cybersecurity Testing and Conformity**

IEEE 802 LMSC supports the consideration in the NPRM as commented by various responses[[9]](#footnote-9),[[10]](#footnote-10) to provide options for device manufacturers testing and self-assessment as well as FCC-approved industry accredited labs (e.g., Wi-Fi Alliance authorized test labs[[11]](#footnote-11)) or by an FCC-approved CyberLAB. IEEE 802 LMSC believes that availability of these options for conformity is key in the efficiency of compliance programs and hence critical in successful adoption of such a voluntary program. Details of such options and the specific scope of such testing is a subject of further study.

**Conclusion**

IEEE 802 LMSC thanks the Commission for the opportunity to comment on this important NPRM on cybersecurity labeling program for IoT and supports initiating the voluntary labeling program. We respectfully request the Commission to consider our reply comments listed in this response.

Respectfully submitted

By: /ss/.

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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. [↑](#footnote-ref-1)
2. 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, in IEEE Std 802.11ah-2016 (Amendment to IEEE Std 802.11-2016, as amended by IEEE Std 802.11ai-2016), vol., no., pp.1-594, 5 May 2017, doi: 10.1109/IEEESTD.2017.7920364. [↑](#footnote-ref-2)
3. Wi-Fi Alliance: The future of farming: Testing the rural range of Wi-Fi CERTIFIED HaLow™. [Available online](https://www.wi-fi.org/beacon/neil-weste/the-future-of-farming-testing-the-rural-range-of-wi-fi-certified-halow) [accessed: 26 September 2023] [↑](#footnote-ref-3)
4. “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 1: Enhancements for High-Efficiency WLAN,” in IEEE Std 802.11ax-2021 (Amendment to IEEE Std 802.11-2020), pp.1-767, 19 May 2021, doi: 10.1109/IEEESTD.2021.9442429. [↑](#footnote-ref-4)
5. “IEEE Standard for Low-Rate Wireless Networks,” in IEEE Std 802.15.4-2020 (Revision of IEEE Std 802.15.4-2015), vol., no., pp.1-800, 23 July 2020, doi: 10.1109/IEEESTD.2020.9144691. [↑](#footnote-ref-5)
6. Wi-Fi Alliance: Security. [Available online](https://www.wi-fi.org/discover-wi-fi/security) [accessed: 26 September 2023] [↑](#footnote-ref-6)
7. Comments of Wi-Fi Alliance, TBD. [↑](#footnote-ref-7)
8. Recommended Criteria for Cybersecurity Labeling for Consumer Internet of Things (IoT) Products, Section 2.1 Scope of an IoT Product, 4 February 2022. [Available online](https://doi.org/10.6028/NIST.CSWP.02042022-2) [accessed: 26 September 2023] [↑](#footnote-ref-8)
9. Comments of Wi-Fi Alliance, TBD. [↑](#footnote-ref-9)
10. Comments of Keysight Technologies, Inc.: “Test and Measurement Perspective and Thoughts”, 14 September 2023. [Available online](https://www.fcc.gov/ecfs/document/1091361381859/1) [accessed: 26 September 2023] [↑](#footnote-ref-10)
11. Wi-Fi Alliance: Certification, Authorized Test Labs. [Available online](https://www.wi-fi.org/certification/authorized-test-laboratories) [accessed: 26 September 2023] [↑](#footnote-ref-11)