Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Spectrum Requirements for the Internet of Things	)	ET Docket No. 21-353
	)	
	)	

To: The Commission

COMMENTS
OF THE
LAND MOBILE COMMUNICATIONS COUNCIL

The Land Mobile Communications Council ("LMCC") hereby submits its comments in response to the above-identified Notice of Inquiry ("NOI") adopted by the Federal Communications Commission ("FCC" or "Commission") on September 29, 2021.[1] The NOI is in response to a Congressional directive in the 2021 National Defense Authorization Act that the FCC seek comment on current and future spectrum requirements "to enable better connectivity relating to the Internet of Things ("IoT").[2] The LMCC is pleased that the FCC has not limited the NOI to consideration of commercial wireless spectrum needs but recognizes that the IoT revolution will extend to business and governmental entities as well. Because the LMCC represents that community of users, it provides the following comments.

I. Introduction

The LMCC is a non-profit association of organizations representing virtually all users of land mobile radio systems, providers of land mobile services, and manufacturers of land mobile

[1] *Spectrum Requirements for the Internet of Things*, Notice of Inquiry, ET Docket No. 21-353 (rel. Sept. 30, 2021).
[2] William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Pub. L. No. 116-283, § 9204(c), 134 Stat. 3388, 4801 ("NDAA").

radio equipment. The LMCC acts with the consensus and on behalf of the vast majority of public safety, business, industrial, transportation, and private commercial radio users, as well as a diverse group of land mobile service providers and equipment manufacturers. Membership includes the following organizations:

- American Association of State Highway and Transportation Officials ("AASHTO")
- American Automobile Association ("AAA")
- American Petroleum Institute ("API")
- Association of American Railroads ("AAR")
- Association of Public-Safety Communications Officials-International, Inc. ("APCO")
- Aviation Spectrum Resources, Inc. ("ASRI")
- Enterprise Wireless Alliance ("EWA")
- Forest Industries Telecommunications ("FIT")
- Forestry-Conservation Communications Association ("FCCA")
- Government Wireless Technology & Communications Association ("GWTCA")
- International Association of Fire Chiefs ("IAFC")
- International Municipal Signal Association ("IMSA")
- MRFAC, Inc. ("MRFAC")
- Telecommunications Industry Association ("TIA")
- The Monitoring Association ("TMA")
- Utilities Technology Council ("UTC")
- Wireless Infrastructure Association ("WIA")

The businesses and governmental entities represented by these organizations rely on a broad range of wireless facilities to address internal communications requirements. Because the collection and dissemination of data is playing an increasingly significant role in many of their activities, ensuring that they have access to reliable IoT capability is essential.

II. The Nation's Governmental and Business Enterprise Entities Require Reliable Licensed Spectrum on Which to Conduct IoT Operations

The Commission – and Congress - are correct that IoT applications already are far-reaching and are expanding exponentially. The migration to digital technology and the ever-increasing ubiquity of data transmissions have permeated all aspects of American life. It is sound spectrum

policy to acknowledge this fact and plan for a future that undoubtedly will involve a growing demand for IoT functionality.

The NDAA requires the FCC to solicit comments about the adequacy of allocated and planned spectrum "for commercial wireless services that could support the growing IoT."[3] Commercial services undoubtedly will play a meaningful role for consumers and even for public safety and industrial entities in some instances. However, the NOI is correct in seeking comment about IoT possibilities in spectrum bands beyond those being considered for commercial wireless access.

The NOI recognizes that industrial and governmental entities increasingly are investigating and investing in IoT services and applications to track inventory, run facilities more efficiently, provide faster field response and real-time data links, and conduct numerous other activities.[4] In some cases, a commercial platform can be used for these applications. But as the LMCC has reminded the FCC in other instances, commercial networks do not always have coverage in the locations where these entities require them, which can be substantial distances from more populated communities. Networks designed primarily for consumer usage do not always provide the levels of reliability and resiliency needed, and sometimes legally required, for public safety and public service operations. The FCC's spectrum policies must provide access to licensed spectrum that can support their IoT services as well as those designed for consumer applications.

Additionally, the NOI defines IoT as "a system of Internet-connected devices."[5] That definition is accurate when considering consumer applications such as the "connected home" where IoT can be used to control temperature, appliances, entertainment devices, lighting, and other home

[3] *Id*. at 4801 § 9204(c)(1)
[4] NOI at ¶ 3.
[5] *Id*. at ¶ 2.

automation features. It covers many industrial and governmental applications as well since connection to the Internet, with the ability to collect large amounts of data and send it across the street or around the globe almost instantaneously, has transformed governmental and industrial activities to a profound degree.

However, as the FCC and Congress are aware, connecting facilities to the Internet also can expose data to cybersecurity risks. It can be stolen or manipulated to compromise the operations of systems that are essential to the functioning of this nation. While detection and deterrence capabilities continue to improve, these risks mean that the IoT definition also should encompass the "Interconnection of Things" in a closed loop network for certain entities, networks that are not connected to the Internet at all. The allocation of spectrum for governmental and industrial IoT usage will allow them to enjoy the increasingly essential functionality IoT services can offer without exposing them to hacking and other cybersecurity risks that arise when facilities are tied to the Internet.

The NOI questions whether IoT transmissions are so brief and intermittent that non-exclusive use spectrum or shared spectrum might adequately address these needs.[6] It points to the dynamic sharing in Citizens Broadband Radio Services ("CBRS") as an example of such a licensing arrangement. Creative spectrum sharing approaches like CBRS undoubtedly will play a role in meeting IoT requirements, as will deployment on commercial networks. Yet there are governmental and industrial applications for which shared use and/or non-exclusive use spectrum simply will not be adequate. In investigating what spectrum will be needed to support IoT growth and thereby deliver the governmental, industrial, medical, educational, and other services that can be provided

[6] *Id*. at ¶ 7.

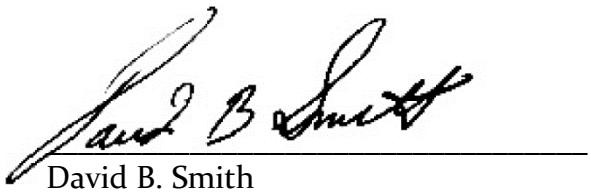
with this transformative technology, exclusive licensed spectrum for public safety and business industrial entities must be included in the analysis.

III. Conclusion

The LMCC is pleased that the FCC has initiated this proceeding and is eager to work with the Commission in addressing these vital spectrum issues.

Respectfully submitted,

LAND MOBILE COMMUNICATIONS COUNCIL



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