

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

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

**REPLY COMMENTS OF THE UTILITIES TECHNOLOGY COUNCIL, THE EDISON  
ELECTRIC INSTITUTE AND THE NATIONAL RURAL ELECTRIC COOPERATIVE  
ASSOCIATION**

The Utilities Technology Council (“UTC”), the Edison Electric Institute (“EEI”), and the National Rural Electric Cooperative Association (“NRECA”) (collectively the Utility Trade Associations) hereby provide the following reply comments in response to the Notice of Inquiry in the above-referenced proceeding.<sup>1</sup> The Utility Trade Associations support the Commission’s Notice of Inquiry, and encourage the Commission to promote access to additional licensed spectrum and to enable more effective and intensive use of spectrum by utilities to support their private wireless communications networks that they use to ensure the safe, reliable and secure delivery of essential electric, gas and water services.

Federal spectrum sharing may open opportunities for utilities and other critical infrastructure industries to access additional licensed spectrum and coexist with incumbent federal operations, thus making more effective use of federal spectrum without reallocation, relocation or otherwise disrupting incumbent operations. Various approaches to spectrum sharing are available and do not need to be overly complex to ensure coexistence with incumbent federal operations. Finally, although utilities do operate systems using unlicensed spectrum and shared

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<sup>1</sup> Spectrum Requirements for the Internet of Things, *Notice of Inquiry*, ET Docket No. 21-353 (rel. Sept. 30, 2021)(hereinafter, “NOI”).

spectrum to support some of their communications needs, such as advanced metering infrastructure (“AMI”), they need access to licensed spectrum to ensure reliability and security for mission critical communications operations that support smart grid and other Internet of Things (“IoT”) applications.

Utilities are not opposed to spectrum sharing and unlicensed operations, provided that these approaches are implemented in a way that protects incumbent operations from interference. In that regard, The Utility Trade Associations strongly disagree with comments on the record characterizing unlicensed use of the 6 GHz band as an example for the Commission to follow for unlicensed access to other bands for IoT. Quite the opposite, incumbent licensed microwave system stakeholders are very concerned that unlicensed use of the 6 GHz band will lead to widespread and significant interference, which will have potentially disastrous consequences for the safe, reliable, and secure delivery of essential energy and water services, as well as public safety services to the public at large. Real-world interference tests have proven that unlicensed 6 GHz low-power indoor (“LPI”) devices are certain to cause interference to incumbent licensed microwave systems, and comments to the contrary fail to provide any substantial evidence in support of their claims of coexistence. Therefore, the record does not support comments promoting unlicensed use of the 6 GHz band as a model for IoT access to other spectrum bands.

## **I. Introduction and Background**

EEI is a trade association that represents U.S. investor-owned electric generation and distribution companies, including all of the major regional electric utilities. Collectively, EEI’s members provide electricity for 220 million Americans, operate in all 50 states and the District of Columbia, and directly and indirectly employ more than seven million people in communities across the United States. EEI members are among the nation’s largest users of communications

services and operate some of the largest private communications networks to meet their increasingly complex communications requirements. While some EEI members use commercial wireless networks for certain applications, they also require private wireless networks because their operations are situated in remote areas well beyond the coverage of commercial providers and because they require a mission-critical level of reliability, resiliency, and security that cannot be met by commercial networks.

NRECA is the national trade association representing more than 900 local electric cooperatives operating in 48 states. America's electric cooperatives power over 20 million businesses, homes, schools and farms across 56 percent of the nation's landmass and serve more than 42 million people. Of the 42 million Americans served by cooperatives, an estimated 4 million live in persistent poverty counties. Rural electric cooperatives serve 88% of the counties of the United States. Rural electric cooperatives were formed to provide safe, reliable electric service to their member-owners at the lowest reasonable cost. Rural electric cooperatives are dedicated to improving the communities in which they serve; management and staff of rural electric cooperatives are active in rural economic development efforts. Electric cooperatives are private, not-for-profit entities that are owned and governed by the members to whom they deliver electricity. Electric cooperatives are democratically governed and operate according to the seven Cooperative Principles.<sup>2</sup>

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<sup>2</sup> The seven Cooperative Principles are: Voluntary and Open Membership, Democratic Member Control, Members' Economic Participation, Autonomy and Independence, Education, Training and Information, Cooperation Among Cooperatives, and Concern for Community.

UTC is the international trade association for the telecommunications and information technology interests of electric, gas and water utilities and other critical infrastructure industries.<sup>3</sup> UTC's members include large investor-owned utilities who may serve millions of customers in multi-state service territories, and UTC's members also include smaller rural electric cooperative and public power utilities who may serve only a few thousand customers in rural areas and remote communities. All these utilities own, maintain, and operate private internal communications networks that they use to support the safe, reliable, and effective delivery of essential energy and water services. These private internal communications networks carry both voice and data traffic, and additional capacity and coverage is needed to support communications with a proliferation of intelligent electronic devices used to increasingly monitor and control electricity, gas, and water services remotely in real-time, including distributed energy resources such as solar and wind generation.<sup>4</sup> This type of grid modernization through the use of communications to improve utility services is part of the larger universe of the Industrial Internet of Things ("IIoT").

The Utility Trade Associations are among the members of the Industrial Internet of Things Coalition ("IIoT Coalition"), which has participated in several Commission proceedings to encourage the development of policies to support greater access to spectrum for grid modernization, as well as other enterprise communications needs.<sup>5</sup>

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<sup>3</sup> [www.utc.org](http://www.utc.org).

<sup>4</sup> Utilities need additional spectrum to be able to support new applications, such as distributed energy resources, electric vehicles; new physical and cybersecurity requirements; and enhanced remote monitoring and control technologies, such as distribution automation, power quality monitoring and protective relaying.

<sup>5</sup> See e.g. Reply Comments of the Industrial Internet of Things Coalition, AU Docket No. 19-244 (filed Nov. 12, 2019)(supporting smaller county-based licenses instead of cellular market area licenses for the CBRS auction); Letter from David Rines, Counsel for SouthernLINC on behalf of the Industrial Internet of Things Coalition to Marlene H. Dortch, Secretary, Federal Communications Commission in WT Docket No. 19-38 (filed June 26, 2020)(suggesting various ways for the Commission to encourage secondary market transactions for private wireless network deployments by non-government, industrial entities that have been identified in Presidential Policy

**I. The Commission should promote utility IIoT through policies that support federal spectrum sharing and secondary market access to licensed spectrum.**

The Utility Trade Associations continue to encourage the Commission to promote the development and adoption of policies to support greater access to spectrum by utilities to meet their increasing communications needs, due to grid modernization and IIoT. Specifically, utilities need access to additional licensed spectrum. While utilities do use unlicensed spectrum to support some of their applications, utilities need additional licensed spectrum to support mission-critical communications, which require high reliability and low latency. This licensed spectrum should provide greater capacity and more coverage, so the channels need to be wider for higher bandwidth and the frequency range needs to be low for better propagation. Moreover, the Commission can promote spectrum access for utility IIoT by developing spectrum policies that facilitate secondary market transactions, modify buildout requirements, and support federal spectrum sharing.

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Directive 21 (PPD-21) as providing critical services to the nation.); Letter from David Rines, Counsel for SouthernLINC on behalf of the Industrial Internet of Things Coalition to Marlene H. Dortch, Secretary, Federal Communications Commission in WT Docket No. 19-38 (filed Jan. 28, 2020)(suggesting other ways for the Commission to encourage secondary market transactions that could promote greater opportunities for spectrum leasing, partitioning and disaggregation.); Letter from David Rines, Counsel for SouthernLINC on behalf of the Industrial Internet of Things Coalition to Marlene H. Dortch, Secretary, Federal Communications Commission in WT Docket No. 19-38 (filed Nov. 17, 2019)(recommending that that the Commission 1) Allow build-out extensions of up to two years if the lease or sale agreement is reached within 12 months of the licensee’s build-out deadline; 2) Adopt flexible performance requirements for private internal systems whose coverage and operating requirements are defined by the parameters of the facilities they need to cover (e.g., factories, refineries, airports, pipelines, and ports), building on the FCC’s description of “substantial service” as one that addresses a unique, niche market; 3) Continue the trend toward longer license terms for geographic authorizations to more closely align license terms with lease timelines needed to support investments by industrial users; 4) Process leases under IAP and make other changes to the FCC forms to facilitate prompt processing with minimal administrative effort by the parties; and 5) Reconstitute the spectrum dashboard so parties can identify available spectrum); Comments of the American Petroleum Institute in WT Docket No. 19-38 (filed June 3, 2019)(suggesting that the Commission promote opportunities for critical infrastructure industries (CII) to partition, disaggregate and lease spectrum, incentivize large carriers to partition, disaggregate and lease their spectrum at a reasonable rate; provide reasonable build-out requirements for lessees; and smaller license areas for CII); and Comments of the National Rural Electric Cooperative Association in WT Docket No. 19-38 at 7-8 (filed June 3, 2019)(suggesting among other things that the Commission address spectrum for private internal purposes by utilities, instead of just commercial carriers.)

The utility industry, as well as other stakeholders such as those represented in the IIoT Coalition, have explained in comments in numerous other proceedings that utilities lack sufficient licensed spectrum for their private internal communications networks, and utilities rely on these private internal communications networks for mission-critical communications.<sup>6</sup> While utilities may use commercial communications services for some of their IIoT communications needs, utilities also own, maintain and operate their own private internal communications networks to ensure reliability, security and safety because commercial communications networks do not provide sufficient coverage into remote areas and they otherwise do not meet utilities' security and communications requirements.<sup>7</sup> Similarly, utilities also operate systems using unlicensed spectrum, but these unlicensed operations do not ensure the appropriate levels of reliability and security required for companies classified as "Critical Infrastructure" by the Department of Homeland Security.<sup>8</sup>

The existing licensed spectrum that utilities use is allocated in narrowband channels which lack sufficient capacity to meet increasing demands, and there is insufficient spectrum available in other bands with greater bandwidth in suitable frequency ranges to provide the wide area coverage utilities need for their field area networks. Although utilities have been able to acquire some additional spectrum through secondary markets and through competitive bidding,<sup>9</sup>

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<sup>6</sup> *Supra* n. 9.

<sup>7</sup> *See e.g.*, Letter from David Rines, Counsel for SouthernLINC on behalf of the Industrial Internet of Things Coalition to Marlene H. Dortch, Secretary, Federal Communications Commission in WT Docket No. 19-38 (filed June 26, 2020)(explaining that the companies represented in the IIoT Coalition use commercial wireless networks for certain applications, but the majority also require private wireless facilities for their industrial operations which are situated in remote areas well beyond the coverage of commercial providers, and which require specific reliability, resiliency, security and/or functional criteria that are not satisfied on commercial networks.)

<sup>8</sup> <https://www.cisa.gov/critical-infrastructure-sectors>.

<sup>9</sup> *See* NOI at ¶ 7, *citing* Alpha Wireless, Private LTE and CBRS: the Utilities Perspective, <https://alphawireless.com/private-lte-and-cbrs-the-utilities-perspective/>; Fierce Wireless, CBRS will bring change to energy and utility industries, <https://www.fiercewireless.com/wireless/cbrs-will-bring-change-to-energy-and-utility-industries>; Fierce Wireless, Industry Voices – Paolini: Why did utilities pay so much for CBRS licenses?,

they generally lack sufficient resources to compete with commercial service providers in spectrum auctions for licenses in many areas, particularly in metropolitan areas, and few suitable spectrum options are available on the secondary market, due in large part to the lack of sufficient incentives for existing licensees to divest any spectrum that they are not using and do not need. Moreover, the size of the geographic areas may not be narrowly tailored to their needs and/or they may succeed in acquiring only some of the geographic areas they need, thus leaving them with a Hobson's Choice of paying for too much geographic area or only being able to acquire a patchwork of the licenses they need.<sup>10</sup>

**A. Access to spectrum through secondary market transactions and federal spectrum sharing.**

To provide adequate spectrum for grid modernization for utilities, the Commission should promote opportunities for utilities to acquire spectrum through secondary market transactions and through federal spectrum sharing. As explained above, utilities need access to licensed spectrum especially in lower frequency ranges with wider channels, ideally allocated in paired channel blocks of 5x5 MHz or 3x3 MHz configurations in spectrum bands designated for standardized equipment. This will enable utilities to deploy private internal communications networks that provide the capacity and coverage they need to meet their increasing demands, while at the same time enabling them to deploy these networks on a cost-effective and timely basis.

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<https://www.fiercewireless.com/private-wireless/why-did-utilities-pay-so-much-for-cbrs-licenses> (noting that “the Commission’s framework for dynamic spectrum sharing in Citizen Broadband Radio Services (CBRS), including access to spectrum through the licensed-by-rule Generalized Authorized Access (GAA) tier has been used by some utility networks and IoT applications in the United States.”)

<sup>10</sup> Note that UTC, EEI, and the IIoT Coalition advocated against the use of larger geographic area licenses in the CBRS auction precisely because doing so would foreclose the ability of utilities to compete for access to this spectrum. *Supra n. 9.*

Specifically, with regard to secondary market opportunities, the Commission should promote partitioning, disaggregation, and leasing of licensed spectrum. As the IIoT Coalition has recommended, the Commission should promote opportunities for utilities and other Critical Infrastructure Industries (“CII”) to access licensed spectrum.<sup>11</sup> In this regard, the Utility Trade Associations support the Commission’s observation in the NOI and the comments on the record in support of exploring possibilities for IoT outside spectrum bands being considered for commercial wireless access.<sup>12</sup> Moreover, the spectrum bands that could be used by utilities for IIoT are “not well-suited to other types of commercial wireless networks.”<sup>13</sup> As such, utility access to these bands would make effective use of spectrum without diminishing spectrum that could be used for commercial purposes.

Utilities are pursuing federal spectrum sharing as a strategy to access additional spectrum that is suitable to provide sufficient capacity and coverage cost-effectively to meet their increasing communications needs. There are different approaches to spectrum sharing that may be applied depending on various factors, including the extent to which certain spectrum bands are already being used as well as the proposed use of the band by new entrants. Utilities require highly reliable communications, and spectrum sharing approaches will need to maintain certain QoS to ensure communications reliability. In addition, utilities need low latency

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<sup>11</sup> Letter from David Rines, Counsel for SouthernLINC on behalf of the Industrial Internet of Things Coalition to Marlene H. Dortch, Secretary, Federal Communications Commission in WT Docket No. 19-38 (filed Dec. 5, 2019)(recommending that “Industrial and critical infrastructure entities require licensed wireless spectrum for private wireless networks. Expanding the proposed rule changes to include industrial and critical infrastructure entities can facilitate their ability to deploy cost-effective private wireless networks and IIoT applications that enhance productivity, security and safety.”)

<sup>12</sup> NOI at ¶7. *See also* Comments of the Land Mobile Communications Council in WT Docket No. 21-353 at 3 (filed Nov. 1, 2021)(stating “the NOI is correct in seeking comment about IoT possibilities in spectrum bands beyond those being considered for commercial wireless access.”)

<sup>13</sup> *Id.*



communications, which again will factor into the spectrum sharing approach that could be used, so that these latency requirements can be met.

**B. Removing barriers to utility access to spectrum for IIoT applications.**

In addition to identifying additional spectrum and developing spectrum sharing approaches, the Commission should remove regulatory barriers to provide utilities with access to the spectrum they need to meet their increasing communications needs. The central issue for private networks is that they have different requirements than commercial networks. Whereas commercial networks tend to be deployed in urban and suburban areas rather than rural and remote areas, utility private networks are deployed to ensure coverage to infrastructure and personnel in remote areas, as well as in urban and suburban areas. Moreover, utilities have the proper incentives to deploy their networks where they are needed and to make effective use of the spectrum that is available.

Unfortunately, buildout requirements designed for commercial service providers that are based on population coverage are not aligned with utilities' needs to deploy private wireless networks to cover critical infrastructure or reach personnel in remote areas.<sup>14</sup> The Commission should develop alternative buildout metrics based on geographic coverage instead of population, which reflects the reality that utilities are deploying their IIoT systems to reach critical infrastructure, which may be in remote areas.<sup>15</sup> The Commission has already established

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<sup>14</sup> See Comments of Puloli in WT Docket No. 21-353 (filed Nov. 1, 2021)(stating that “population coverage might not be a relevant threshold for IoT deployments that are focused on niche use cases, including serving utilities or the oil and gas industries,” and that “the Commission should permit flexible build-out requirements so that providers can meet changing demand.”)

<sup>15</sup> See Comments of the National Rural Electric Cooperative Association in WT Docket No. 19-38 at 7-8 (stating that electric cooperatives operate private internal communications networks, because “commercial carrier services often do not adequately cover the rural and remote areas served by electric coops or are intended to cover population centers and not utility infrastructure such as substations and transmission and distribution lines.”)

different buildout requirements for IoT networks,<sup>16</sup> but the Commission should also develop buildout requirements that provide utilities with additional flexibility to meet these requirements.<sup>17</sup>

Similarly, the size and/or border of a geographic area license may not match the service territory of a utility, such that it may cover more than the utility needs or less than it needs.<sup>18</sup> That may impede a utility from winning such a license at auction, if it is forced to bid on a license that is larger than it needs.<sup>19</sup> Conversely, utilities may be able to access licensed spectrum that is better tailored to meet their needs through voluntarily negotiated agreements to partition, disaggregate or lease spectrum from licensees.<sup>20</sup> For example, if a utility needs access to licensed spectrum in a rural area, the utility may be able to negotiate with a commercial

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<sup>16</sup> Facilitating Shared Use of the 3100-3550 MHz Band, 36 FCC Rcd. 36 FCC Rcd 5987, 6033-6033, ¶¶126-28 and Expanding Flexible Use of the 3.7-4.2 GHz Band, Report and Order and Order of Proposed Modification, 35 FCC Rcd 2343, 2388, ¶¶ 99-100 (2020).

<sup>17</sup> See e.g., Letter from the Industrial Internet of Things Coalition to Marlene H. Dortch, Secretary, Federal Communications Commission in WT Docket No. 19-38 at 3-4 (filed Nov. 7, 2019)(recommending that the Commission encourage secondary market transactions for utilities to access spectrum by 1) allowing build-out extensions of up to two years if the lease or sale agreement is reached within 12 months of the licensee’s build-out deadline; and 2) adopting flexible performance requirements for private internal systems whose coverage and operating requirements are defined by the parameters of the facilities they need to cover (e.g., factories, refineries, airports, pipelines, and ports), building on the FCC’s description of “substantial service” as one that addresses a unique, niche market.) See also NOI at ¶9 (inviting comment on adjustments to the Commission’s rules [such as buildout requirements] to support the development and use of IoT on dedicated IoT networks using licensed spectrum.”)

<sup>18</sup> See NOI at ¶9 (asking “Are there other licensing rules, such as license areas and license terms, which limit the use of IoT in these bands? What can the Commission do to make these licenses more appealing to IoT network operators? Alternatively, are there ways in which the Commission’s leasing rules could be amended to make it easier for IoT operators to lease spectrum for their networks, rather than become licensees themselves?”)

<sup>19</sup> In the Citizens Broadband Radio Service auction, eleven utilities entered the auction and 10 submitted successful bids totaling over \$174 million and acquired 371 licenses for CBRS spectrum in 150 counties.

<sup>20</sup> See Comments of the American Petroleum Institute in WT Docket No. 19-38 (filed May 31, 2019)(stating “API feels that a long-term solution to the unused spectrum availability is for the Commission to offer smaller license areas initially, including spectrum at the sub-County level. This will allow spectrum in the primary market to be better targeted to those entities that will put it to good use.”)

communications service provider to partition that part of its license that the service provider doesn't use or need.

The Commission should consider creating incentives for licensees to enter into such agreements, and should adopt suggestions that were previously submitted to the Commission by the IIoT Coalition to promote opportunities for partitioning, disaggregating, and leasing spectrum.<sup>21</sup> This would help to put spectrum to more effective use to support IIoT applications by utilities.

**II. Unlicensed use of the 6 GHz band is certain to cause interference to licensed microwave incumbents and the Commission should refrain from using it as a blueprint to meet the spectrum requirements for IoT.**

Although utilities support spectrum sharing as a means to promote access to additional licensed spectrum, the Utility Trade Associations oppose comments on the record that suggest that unlicensed use of the 6 GHz band should serve as a model for the Commission to follow to address the spectrum requirements for IoT generally.<sup>22</sup> These comments ignore real-world tests

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<sup>21</sup> See Letter from David Rines, Counsel to Southern Linc to Marlene H. Dortch, Secretary, Federal Communications Commission in WT Docket No. 19-38, Attachment at p. 2 (filed Jan. 28, 2021)(emphasizing that “The IIoT Coalition supports incentives for market-driven transactions that could promote greater use of licensed spectrum via leasing/partitioning/disaggregation,” and providing the following recommendations:

1. Allow build-out extensions of up to two years if the lease or sale agreement is reached within 12 months of the licensee’s build-out deadline.
2. Adopt flexible performance requirements for internal, private wireless networks whose coverage and operating requirements are defined by the facilities they cover - consistent with the FCC’s definition of substantial service.
3. Offer longer license terms for geographic authorizations to more closely align license terms with lease timelines needed to provide industrial operators with investment certainty.
4. Permit reaggregation of partitioned/disaggregated spectrum.
5. Facilitate prompt processing of spectrum leasing transactions with minimal administrative effort by the parties to implement more timely processing

<sup>22</sup> See Comments of Dynamic Spectrum Alliance in WT Docket No. 21-353 at 2 (filed Nov. 1, 2021)(claiming that “he Commission’s rules for the 6 GHz band are another example of a successful sharing framework that will support a wide range of innovative use cases, including IoT.”); Comments of NCTA – The Internet and Television Association in WT Docket No. 21-353 (filed Nov. 1, 2021)(arguing that the technical rules protect Fixed Service (FS) operations from interference, such that these rules could serve to “form a baseline that could likely be amended in relevant respects to facilitate protection for the Federal FS operations in 7 GHz.”); and Comments of the Wi-Fi Alliance in WT Docket No. 21-353 at 8 (filed Nov. 1, 2021)(stating that “the Commission should take actions that would enhance the 6 GHz band’s potential to support IoT,” including allowing very low power operations and

by stakeholders representing incumbent fixed service microwave licensees that found that unlicensed 6 GHz low-power indoor LPI devices will cause interference to licensed microwave systems in the band.<sup>23</sup> Given these tests and the interference potential posed by unlicensed devices operating in the 6 GHz band, the Commission should refrain from expanding unlicensed operations in the 6 GHz band or adapting the 6 GHz rules to promote access into the 7 GHz band, as these comments contend. Doing so will only exacerbate interference to licensed microwave systems in the 6 GHz band, and it would also cause interference to Federal operations if such unlicensed operations were permitted in the 7 GHz band.

Instead, the Commission should be reexamining its rules for unlicensed operations in the 6 GHz band, not using them to expand unlicensed operations in the 6 GHz band or worse permitting unlicensed operations in other bands, such as the 7 GHz band. Moreover, the Commission should be conducting interference testing of unlicensed 6 GHz LPI devices, and to prevent these devices from operating until testing has proven that they will not cause interference to licensed microwave systems in the band. Finally, UTC agrees with comments on the record that point out that sufficient unlicensed spectrum is already available, and that the Commission instead should be focusing its efforts to make available more licensed spectrum for IoT and IIoT.<sup>24</sup>

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permitting higher power for 6 GHz LPI devices, as well as mobile standard power access operations and higher power for fixed point-to-point configurations of standard power access devices.)

<sup>23</sup> See Letter from Larry Butts, Manager, Telecom Engineering, Southern Company Services, Inc. to Marlene H. Dortch, Secretary, Federal Communications Commission in ET Docket No. 18-295 and GN Docket No. 17-183 (filed June 23, 2021); and see Attachment A: Test Report on the Effects of 6 GHz Unlicensed RLAN Units on Fortson to Columbus Microwave Link June 21, 2021, available at <https://www.fcc.gov/ecfs/filing/106231367519302>. (concluding that 6 GHz LPI devices will cause significant widespread and constant interference to licensed microwave systems).

<sup>24</sup> See e.g., Comments of AT&T in WT Docket No. 21-353 at 6 (filed Nov. 1, 2021 (predicting “increases in the number of licensed spectrum dependent IoT devices and use cases and for those trends to, in turn, generate a disproportionately greater acceleration in the demand for licensed spectrum resources,” and concluding that “The IoT thus definitely contributes to the aggregate demand for flexible-use licensed spectrum and will continue to do so

Respectfully,

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November 16, 2021

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with increasing intensity.”) Comments of CTIA in WT Docket No. 21-353 (filed Nov. 1, 2021)(emphasizing that “substantial unlicensed and shared spectrum resources are available for IOT”); and Comments of Ericsson in WT Docket No. 21-353 at 6 (filed Nov.1, 2021)(stating “while there is currently insufficient flexible-use, licensed spectrum to support 5G and IoT, particularly in the mid-band, there is currently sufficient unlicensed spectrum available.”)