

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

In the Matter of)	
)	
Use of Spectrum Bands Above 24 GHz for Mobile Radio Services)	GN Docket No. 14-177
)	
Establishing a More Flexible Framework to Facilitate Satellite Operations in the 27.5-28.35 GHz and 37.5-40 GHz Bands)	IB Docket No. 15-256
)	
Petition for Rulemaking of the Fixed Wireless Communications Coalition to Create Service Rules for the 42-43.5 GHz Band)	RM-11664
)	
Amendment of Parts 1, 22, 24, 27, 74, 80, 90, 95, and 101 To Establish Uniform License Renewal, Discontinuance of Operation, and Geographic Partitioning and Spectrum Disaggregation Rules and Policies for Certain Wireless Radio Services)	WT Docket No. 10-112
)	
Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz and 48.2-50.2 GHz Frequency Bands; Allocation of Spectrum to Upgrade Fixed and Mobile Allocations in the 40.5-42.5 GHz Frequency Band; Allocation of Spectrum in the 46.9-47.0 GHz Frequency Band for Wireless Services; and Allocation of Spectrum in the 37.0-38.0 GHz and 40.0-40.5 GHz for Government Operations)	IB Docket No. 97-95
)	

CTIA REPLY TO OPPOSITIONS

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CTIA REPLY TO OPPOSITIONS

I. INTRODUCTION AND SUMMARY.

CTIA respectfully submits this Reply to oppositions to Petitions for Reconsideration in the above-captioned proceeding.¹ CTIA commends the Commission for opening up high-band spectrum for flexible-use wireless broadband, which will drive innovation and economic growth and ensure the United States' leadership in 5G.

The underlying objective of this proceeding is the rapid and flexible deployment of spectrum for mobile terrestrial services. To promote that goal and foster innovation and growth, CTIA therefore urges the Commission to:

- ***Rescind the cybersecurity reporting obligation contained in Rule 30.8***, which was

¹ *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 8014 (2016) (“*Spectrum Frontiers Order*”).

adopted without the required notice and comment and is unjustified on the merits;

- **Maintain the carefully-balanced licensing framework for the 28 GHz and 37-40 GHz bands**, which was developed after careful evaluation of the extensive record and would, if modified, undermine implementation of 5G for terrestrial mobile services; and
- **Adopt the CTIA Petition seeking additional spectrum for exclusive, licensed use**, by revising the rules for the 37.0-37.6 and 66-71 GHz bands.²

In taking these steps, the Commission can better ensure that the wireless industry is able to quickly and efficiently deploy next-generation products and services to consumers.

II. THE RECORD REQUIRES RECONSIDERATION OF RULE 30.8.

Rule 30.8 violates the Administrative Procedure Act (“APA”) and is unsound. The few opponents of reconsideration ignore legal standards, as well as industry cybersecurity work and public-private partnerships.³ Rule 30.8 should be rescinded immediately.

A. The Commission Violated the APA by Not Providing Notice and an Opportunity to Comment on Rule 30.8’s Cybersecurity Reporting Obligation.

In promulgating a rule, the Commission must provide notice “that includes ‘either the terms or substance of the proposed rule or a description of the subjects and issues involved.’”⁴ As CTIA explained,⁵ Rule 30.8 was not “tested via exposure to diverse public comment,” so parties could not “develop evidence in the record to support their objections.”⁶

Commenters Public Knowledge (“PK”) and Open Technology Institute (“OTI”) fail to persuasively make the case for retaining this flawed rule. They incorrectly claim that industry “chose

² CTIA Petition for Reconsideration, GN Docket No. 14-177 *et al.* (filed Dec. 14, 2016) (“CTIA Petition”).

³ Public Knowledge & Open Technology Institute Opposition to Petitions for Reconsideration, GN Docket No. 14-177 *et al.*, at 15 (filed Jan. 31, 2017) (“PK/OTI Opposition”)

⁴ *Ariz. Pub. Serv. Co. v. EPA*, 211 F.3d 1280, 1299 (D.C. Cir. 2000) (quoting 5 U.S.C. § 553(b)(3)).

⁵ CTIA Petition at 7.

⁶ *Prometheus Radio Project v. FCC*, 652 F.3d 431, 449 (3d Cir. 2011) (citation and internal quotation marks omitted).

not to respond to” security questions.⁷ To the contrary, multiple parties answered numerous questions about security by design and the “confidentiality, integrity, and availability” triad, among others.⁸ The parties could not comment on a certification requirement, however, because the Commission never said it was considering one. PK and OTI further claim that Rule 30.8 was a “logical outgrowth” of the Commission’s questions.⁹ The Commission sought information “to gain insight” and “better understand the security of future mmW band networks.”¹⁰ It did not, however, ask about regulation, and “an unexpressed intention cannot convert a final rule into a ‘logical outgrowth’ that the public should have anticipated.”¹¹ PK and OTI cite *Allina Health Services v. Sebelius*,¹² but the court there *rejected* the “logical outgrowth” argument because “the notice did not actually ‘propose’ adopting a rule” and no “reasonable member of the regulated class” could have anticipated the rule that was ultimately adopted.¹³ The same failure has occurred here—Rule 30.8 is not a “logical outgrowth” of this *NPRM*.

B. Opponents of Reconsideration Fail to Justify Rule 30.8 on the Merits.

Rule 30.8 is arbitrary and capricious because, among other things, the Commission failed to explain how the Rule will improve cybersecurity. In fact, the record shows that these public

⁷ PK/OTI Opposition at 17.

⁸ *See, e.g.*, Comments of CTIA, GN Docket No. 14-177 *et al.*, at 34 (filed Jan. 28, 2016); *Ex Parte* Presentation of CTIA, GN Docket No. 14-177 *et al.* (filed May 23, 2016); *Ex Parte* Notice of 5G Americas, GN Docket No. 14-177 *et al.* (filed Apr. 8, 2016); *Ex Parte* Notice of Competitive Carriers Association, GN Docket No. 14-177 *et al.* (filed Feb. 23, 2016).

⁹ PK/OTI Opposition at 16-17.

¹⁰ *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, Notice of Proposed Rulemaking, 30 FCC Rcd 11878, 11952-53 ¶¶ 260-65 (2015) (“*NPRM*”).

¹¹ *Council Tree Commc’ns, Inc. v. FCC*, 619 F.3d 235, 254 (3d Cir. 2010) (citation and internal quotation marks omitted).

¹² PK/OTI Opposition at 16-17.

¹³ 746 F.3d 1102, 1107-09 (D.C. Cir. 2014).

certifications are burdensome and may undermine security.¹⁴ PK and OTI opine that the Rule’s demands are “straightforward and not unduly burdensome”¹⁵ but offer no support and do not rebut Petitioners’ showings.¹⁶ Other problems with the rule were not considered at all.¹⁷ Rushing to adopt a novel mandate, whose benefits are unclear and which is likely to do harm, is not rational action.

C. The Wireless Ecosystem Addresses Cybersecurity in Collaborative Efforts, Which the Commission Should Continue to Support.

PK and OTI claim that opposition to Rule 30.8 shows a “desire on the part of network operators to be free from any responsibility for the cybersecurity of their own networks.”¹⁸ This suggestion is inane; no operators want “to disregard security concerns of their networks.”¹⁹ The industry has a market imperative to provide secure, high-speed service, and it invests billions to do so.

Companies daily monitor and defend networks. For example, every day, Google checks more than six billion apps and scans 400 million devices,²⁰ and AT&T sees more than 30 billion vulnerability scans and 400 million spam messages cross its network.²¹ In addition to actively

¹⁴ See, e.g., Mobile Future Opposition In Part and Comments In Support Of Petitions for Reconsideration, GN Docket No. 14-177 *et al.*, at 5 (filed Jan. 31, 2017); 5G Americas Petition for Reconsideration, GN Docket No. 14-177 *et al.*, at 14 (filed Dec. 14, 2016) (“5G Americas Petition for Reconsideration”).

¹⁵ PK/OTI Opp. at 15.

¹⁶ See T-Mobile Petition for Reconsideration, GN Docket No. 14-177 *et al.*, at 13 (filed Dec. 14, 2016) (“T-Mobile Petition for Reconsideration”); CTIA Petition at 9.

¹⁷ See, e.g., Skyriver Opposition and Comments, GN Docket No. 14-177 *et al.*, at 13 (filed Jan. 31, 2017) (noting that incumbent licensees “already providing service cannot possibly file a cybersecurity statement six months prior to commencing operations”).

¹⁸ PK/OTI Opposition at 15.

¹⁹ *Id.*

²⁰ Android Security 2015 Annual Report (Apr. 2016), <https://security.googleblog.com/2016/04/android-security-2015-annual-report.html>.

²¹ Chris Boyer, *How the Public Safety Bureau Paper Gets Cybersecurity Wrong*, AT&T Public Policy Blog (Jan. 25, 2017), <https://www.attpublicpolicy.com/cybersecurity/how-the-public-safety->

managing threats, industry is working with standards bodies, like ISO, ATIS, 3GPP, and IEEE, on standards for next-generation technology, including 5G, so that it can continue to meet evolving cybersecurity challenges. Public-private partnerships also support these efforts. Industry helped shape the NIST *Cybersecurity Framework*, a prime example of non-regulatory collaboration, which industry is using, as shown in the Commission’s Communications Security Reliability and Interoperability Council (“CSRIC”).²² The Communications Sector Coordinating Council works with the Department of Homeland Security (“DHS”) in the Critical Infrastructure Protection Advisory Council. Numerous efforts also are underway in the Communications Information Sharing and Analysis Center and DHS’s National Cybersecurity and Communications Integration Center.

DHS, as the sector-specific agency for the communications sector, is central to these activities.²³ Not surprisingly, no recent policy recommendations about cyber or 5G call for a Commission role.²⁴ As Chairman Pai has said, the Commission does not have “the expertise and authority” to regulate here.²⁵ The Commission should rescind Rule 30.8 and continue supporting collaboration.

[bureaupaper-gets-cybersecurity-wrong/](#).

²² CSRIC V is actively addressing cybersecurity, building on prior work and laying a foundation for future collaboration.

²³ See Presidential Policy Directive-21, Critical Infrastructure Security and Resilience (Feb. 12, 2013), <https://www.whitehouse.gov/the-press-office/2013/02/12/presidential-policy-directive-critical-infrastructure-security-and-resil>.

²⁴ See, e.g., U.S. Dep’t of Homeland Security, *Strategic Principles for Securing the Internet of Things (IoT)* (Nov. 15, 2016), [https://www.dhs.gov/sites/default/files/publications/Strategic Principles for Securing the Internet of Things-2016-1115-FINAL....pdf](https://www.dhs.gov/sites/default/files/publications/Strategic_Principles_for_Securing_the_Internet_of_Things-2016-1115-FINAL....pdf); Commission on Enhancing National Cybersecurity, *Report on Growing and Securing the Digital Economy* (Dec. 1, 2016), <https://www.nist.gov/sites/default/files/documents/2016/12/02/cybersecurity-commission-report-final-post.pdf>.

²⁵ *Spectrum Frontiers Order* at Statement of Commissioner Ajit Pai.

III. THE COMMISSION SHOULD REJECT SUGGESTIONS TO MODIFY THE LICENSING FRAMEWORK FOR THE 28 GHZ AND 37.6-40 GHZ BANDS.

The record contains widespread support from the wireless industry as well as a satellite party of the Commission’s licensing framework for the 28 GHz and 37.6-40 GHz bands.²⁶ Having retained the secondary status of Fixed Satellite Service (“FSS”) in the 28 GHz band, the Commission accommodated FSS entities by permitting substantial, flexible use in the band for new satellite earth stations,²⁷ including in urban environments.²⁸ At the same time, the limits provide protection for Upper Microwave Flexible Use Service (“UMFUS”) users from FSS interference²⁹ in a manner that advances the primary purpose of the proceeding, which is to provide additional spectrum for mobile terrestrial services.³⁰

While some entities continue to express concerns about aggregate skyward interference from UMFUS operations,³¹ the Commission already properly considered and rejected these arguments.³²

²⁶ See ViaSat, Inc. Opposition to Petitions for Reconsideration, GN Docket No. 14-177 *et al.*, at 9 (filed Jan. 31, 2017) (“ViaSat Opposition”) (“The adopted spectrum sharing framework responds to concerns raised during the proceeding.”).

²⁷ See *Spectrum Frontiers Order* ¶ 58.

²⁸ ViaSat Opposition at 7.

²⁹ See *e.g.*, Fixed Wireless Communications Coalition Comments, GN Docket No. 14-177 *et al.*, at 3 (filed Jan. 31, 2017); T-Mobile Opposition to Petitions for Reconsideration, GN Docket No. 14-177 *et al.*, at 6 (filed Jan 31, 2017) (“T-Mobile Opposition”); 5G Americas Opposition to Petitions for Reconsideration, GN Docket No. 14-177 *et al.*, at 7 (filed Jan. 31, 2017).

³⁰ *Spectrum Frontiers Order* ¶ 1.

³¹ Comments of EchoStar Satellite Operating Corporation and Hughes Network Systems, LLC on Petitions For Reconsideration, GN Docket No. 14-177 *et al.*, at 2 (filed Jan. 31, 2017) (“EchoStar Comments”); Comments of Lockheed Martin Corporation in Response to Petitions for Reconsideration, GN Docket No. 14-177 *et al.*, at 2 (filed Jan. 31, 2017) (“Lockheed Comments”).

³² See 47 C.F.R §1.429(l) (“Petitions for reconsideration of a Commission action that plainly do not warrant consideration by the Commission” include those that “[r]ely on arguments that have been fully considered and rejected by the Commission”); see also *Spectrum Frontiers Order* ¶¶ 60, 69, 294; T-Mobile Opposition at 20; Intel Corporation Opposition to Petitions for Reconsideration, GN

Upon review of the extensive record, the Commission “d[id] not believe the record demonstrate[d] that there is a risk of interference to satellites from aggregate interference caused by UMFUS stations.”³³ The Commission concluded that “[t]he satellite industry has not shown that ... harmful aggregate interference is likely to occur,”³⁴ and satellite petitioners present no new evidence to justify reconsideration of the Commission’s conclusion.³⁵

Parties also re-argue for other limitations on terrestrial providers in the 28 GHz and 37.6-40 GHz bands, such as (1) limits on base station power;³⁶ (2) mandates for beamforming and power control requirements;³⁷ (3) prohibitions on the use of omni-directional antennas;³⁸ (4) additional requirements to protect non-U.S.-licensed FSS receiving stations;³⁹ and (5) the need for a database of UMFUS operations.⁴⁰ Adopting these limitations would inhibit innovation and limit the flexibility necessary for providing mobile broadband services, thereby undermining the Commission’s goal of rapid deployment of next-generation 5G networks and technologies.⁴¹ The decisions that the Commission reached after evaluating the extensive record allow for rapid and flexible deployment of

Docket No. 14-177 *et al.*, at 11-12 (filed Jan. 31, 2017) (“Intel Opposition”); Nokia Comments, GN Docket No. 14-177 *et al.*, at 4-7 (filed Jan. 31, 2017) (“Nokia Comments”).

³³ *Spectrum Frontiers Order* ¶ 294.

³⁴ *Id.* ¶ 69.

³⁵ *See* 47 C.F.R §1.429(l).

³⁶ SES Americom, Inc. and O3b Limited Opposition to Petitions for Reconsideration, GN Docket No. 14-177 *et al.*, at 14 (filed Jan. 31, 2017) (“SES Opposition”); EchoStar Comments at 2.

³⁷ SES Opposition at 15.

³⁸ Lockheed Comments at 8; SES Opposition at 15-16.

³⁹ Lockheed Comments at 6.

⁴⁰ *Id.* at 10.

⁴¹ Intel Opposition at 9-10; T-Mobile Opposition at 13-14.

5G services while also permitting some use for satellite services. The technical limits were designed to protect FSS use from harmful interference (to the extent required) and should not be revisited based on hypothetical harms. The Commission should affirm its decisions governing the use and licensing of the 28 GHz and 37.6-40 GHz spectrum bands.

IV. THE RECORD SUPPORTS THE GRANT OF CTIA’S PETITION FOR ADDITIONAL EXCLUSIVE-USE SPECTRUM IN THE 37.0-37.6 AND 66-71 GHZ BANDS.

Parties either through reconsideration petitions⁴² or through comments⁴³ have noted the importance of dedicating additional spectrum resources for licensed, exclusive use in the 37-37.6 GHz and 64-71 GHz bands. CTIA agrees with several of the parties that licensed spectrum is a driver of innovation and a significant contributor to the country’s economic growth.⁴⁴ Yet, the Commission has allocated significantly less spectrum for licensed use and even then a significant portion of the licensed spectrum is for shared use. The sharing regime risks undermining the value and utility of spectrum, which will in turn discourage innovation and investment.⁴⁵ Allocating additional spectrum for exclusive, licensed use will benefit markets for licensed *and* unlicensed services in the same band because the technology and infrastructure development that it will enable will enrich both markets.⁴⁶

CTIA has demonstrated that the Commission (1) failed to adequately disclose its rationale and technical basis for failing to equitably divide spectrum between licensed and unlicensed uses in the

⁴² T-Mobile Petition for Reconsideration at 3-8; 5G Americas Petition for Reconsideration at 3-9; Competitive Carriers Association Petition for Reconsideration, GN Docket No. 14-177 *et al.*, at 3-8 (filed Dec. 14, 2016) (“CCA Petition for Reconsideration”).

⁴³ Nokia Comments at 10-11.

⁴⁴ *See e.g.*, T-Mobile Petition for Reconsideration at 4-5; CCA Petition for Reconsideration at 6.

⁴⁵ CCA Petition for Reconsideration at 6.

⁴⁶ *Id.* at 8; T-Mobile Petition for Reconsideration at 5.

spectrum above 24 GHz⁴⁷ and (2) did not investigate the use of a sharing framework for the 37-37.6 GHz that has proven to be effective in the marketplace.⁴⁸ Although CTIA agrees that different spectrum bands will have different physical and propagation characteristics, the Commission provided no analysis to support its quantification of 14 gigahertz of unlicensed spectrum compared to the 3.25 gigahertz of licensed spectrum allocated in the 28 GHz and 37 GHz bands. The lack of reasoned justification for the disparity between licensed and unlicensed spectrum has been highlighted by several other parties.⁴⁹ Nor did the Commission provide reasoning for adopting an untested sharing model over a model that requires licensees to coordinate with federal parties, the latter of which has proven to be highly successful for the AWS-1 and AWS-3 spectrum bands. By failing to provide justification or reasoning for its conclusions, the Commission's decisions are arbitrary and capricious and in violation of the APA.⁵⁰

Oppositions supporting the Commission's allocation and sharing regime have focused primarily on the benefits of shared (37-37.6 GHz) and unlicensed spectrum (64-71 GHz) but have ignored the well-documented benefits of additional licensed spectrum.⁵¹ For example, a recent report developed by Accenture shows that 5G deployment will drive \$500 billion of economic growth, create three million jobs, and produce \$160 billion in benefits and savings while simultaneously

⁴⁷ CTIA Petition at 21-24.

⁴⁸ *Id.* at 24-26.

⁴⁹ *See e.g.*, T-Mobile Petition for Reconsideration at 5; Verizon Comments, GN Docket No. 14-177 *et al.*, at 13 (filed Jan. 28, 2016).

⁵⁰ *See* 5 U.S.C. § 706 (“[T]he agency shall incorporate in the rules adopted a concise general statement of their basis and purpose”); *see also* 47 C.F.R. § 1.425 (“The Commission . . . will issue a decision incorporating its finding and a brief statement of the reasons thereof.”).

⁵¹ Microsoft Corporation Opposition to Petitions for Reconsideration, GN Docket No. 14-177, at 10 (filed Jan. 31, 2017); PK/OTI Opposition at 18; Opposition of the Boeing Company, GN Docket No. 14-177 *et al.*, at 3 (filed Jan. 31, 2017).

driving a projected \$275 billion of investment by the wireless industry.⁵² Additionally, Deloitte released a recent paper that demonstrates wireless-enabled smart grids could create \$1.8 trillion for the U.S. economy, and that wireless devices could create \$305 billion in annual health system savings along with significant improvements to the nation’s public safety and transportation infrastructure.⁵³ The economic value of licensed spectrum has consistently exceeded that of unlicensed spectrum.⁵⁴ The benefits highlighted above will come to fruition only if sufficient spectrum resources are dedicated for licensed wireless providers to invest and develop 5G systems. For all these reasons, the Commission should grant the CTIA Petition and allocate additional licensed spectrum in the 37-37.6 GHz and 66-71 GHz bands to benefit U.S. consumers.

V. CONCLUSION.

The Commission should rescind the cybersecurity reporting obligation contained in Rule 30.8, reject suggestions to modify the licensing framework for the 28 GHz and 37-40 GHz bands, and adopt the CTIA Petition seeking additional spectrum in the 37.0-37.6 and 66-71 GHz bands for exclusive, licensed use.

⁵² *Smart Cities: How 5G Can Help Municipalities Become Vibrant Smart Cities*, ACCENTURE, at 1 (Jan. 2017), http://newsroom.accenture.com/content/1101/files/Accenture_5G-Municipalities-Become-Smart-Cities.pdf (“Accenture Report”).

⁵³ *Wireless Connectivity Fuels Industry Growth and Innovation in Energy, Health, Public Safety, and Transportation*, DELOITTE, at 3 (Jan. 2017), http://www.ctia.org/docs/default-source/default-document-library/deloitte_20170119.pdf.

⁵⁴ See Coleman Bazelon and Giulia McHenry, *Mobile Broadband Spectrum: A Vital Resource for the U.S. Economy*, THE BRATTLE GROUP (2015) (estimating that the economic value of the 645.5 MHz of licensed spectrum is almost \$500 billion); Raul Katz, *Final Report: Assessment of the Economic Value of Unlicensed Spectrum in the United States*, TELECOM ADVISORY SERVICES, LLC (2014) (estimating total surplus from unlicensed wireless spectrum as \$222 billion).

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