Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Modernizing and Expanding Access to the 70/80/90 GHz Bands	)	WT Docket No. 20-133
	)	

COMMENTS OF
NEW AMERICA'S OPEN TECHNOLOGY INSTITUTE
AND PUBLIC KNOWLEDGE

New America's Open Technology Institute and Public Knowledge ("OTI and PK") respectfully file these comments in response to the *Further Notice of Proposed Rulemaking* ("FNPRM") in the above-captioned proceeding.[1] In this proceeding our groups have supported including as many uses cases and users as feasible in the sharing framework for the 70/80/90 GHz band ("E-band"), ensuring open and equal access to this spectrum through the existing database coordination mechanism. Accordingly, we support the Commission's proposal to include co-primary Fixed Satellite Service (FSS) earth stations in the light-licensing regime for the 70 GHz and 80 GHz bands.

I. Introduction and Summary

As the Commission concluded in its January *Report and Order*, the open registration and database-managed coordination of shared access by a wide variety of use cases while protecting incumbents from harmful interference is feasible and enjoys broad support from a diverse set of stakeholders. Expanding access to the E-Band for as many users as practicable is common sense

[1] Report and Order and Further Notice of Proposed Rulemaking, *Modernizing and Expanding Access to the 70/80/90 GHz Bands*, WT Docket No. 20-133 WT Docket No. 20-133 (rel. Jan. 26, 2024) ("Order" or "FNPRM").

spectrum policy that will improve innovative connectivity solutions and promote key public interest goals. Our groups filed comments supporting the inclusion of point-to-point links to endpoints in motion in the 70/80/90 GHz coordination framework as a feasible means to facilitate expanded access to broadband services on aircraft and ships (including ground-to-air, High Altitude Platform Stations, and other stratospheric-based platform services), as well as for fixed satellite service (FSS) earth stations.[2] Accordingly, while we applaud the Commission's *Order* including point-to-point links to endpoints in motion, we urge the agency to similarly authorize the inclusion of FSS gateway earth stations in a unified coordination framework.

OTI and PK urge the Commission to ensure that the widest array of stakeholders are able to utilize 70/80/90 GHz spectrum to expand the quality and affordability of consumer broadband connectivity. Facilitating coordinated access to the "E-Band" for FSS gateways promotes the important public interest goal of enabling broadband service and improved connectivity for both consumers and enterprise, particularly in rural and remote areas. Traditional Part 25 coordination for earth stations entails unnecessary delay and insufficient transparency to other users in the band. Given the well-established success of database coordination in this band—as well as the increasing importance of satellites for broadband and IoT connectivity—the benefits of coordinating in satellite earth stations dwarf any marginal costs or complications.

The 70/80/90 GHz band and the Citizens Broadband Radio Service (CBRS) have clearly demonstrated that database-coordinated sharing can both fully protect incumbents from harmful interference and open a band to more intensive use for a diverse range of use cases. The Commission should build on these landmark regulatory precedents and include all feasible uses.

[2] Comments of Open Technology Institute at New America and Public Knowledge, *Wireless Telecommunications Bureau Seeks to Supplement the Record on 70/80/90 GHz Notice of Proposed Rulemaking*, WT Docket No. 20-133, Public Notice, 36 FCC Rcd 14375 (Dec. 2, 2021).

II. The Commission Should Implement A Unified Database Coordination System to Facilitate Open Access and Make the Most Effective Use of E-Band Spectrum

The Commission should continue to build on the historic precedent it set back in 2003 by adopting the world's first open-access and semi-automated database coordination framework for fixed links in the 70/80/90 GHz band by expanding access to as many new uses and users as practicable, including co-primary fixed-satellite service ("FSS") gateways. OTI and PK urge the Commission to expand on this successful sharing framework to accommodate any wireless technology or use case that can coordinate and protect incumbent and federal users. Coordination with incumbents to avoid harmful interference is entirely feasible, as demonstrated by the history of the E-Band as well as the Citizens Broadband Radio Service in the 3.5 GHz band.[3]

The rules governing open access to these millimeter wave bands represent an early and highly successful example of the enormous public interest benefits of spectrum sharing managed by third-party database coordination.[4] The Commission observed when it originally adopted the rules for this band, an open-access, light-licensing framework is an efficient fit for 70/80/90 GHz because the narrow and highly-directional beams used for fixed links in these millimeter wave bands obviate the need for the traditional manual Part 101 frequency coordination process, which is slower and more expensive.[5] As the Commission explained in 2004: "Highly directional, 'pencil-beam' signal characteristics permit systems in these bands to be engineered in close

[3] *Public Notice* at 2.

[4] *See generally*, Michael Calabrese, "Solving the Spectrum Crunch: Dynamic Spectrum Management Systems," Dynamic Spectrum Alliance report (Oct. 2023), available at https://www.dynamicspectrumalliance.org/solving-the-spectrum-crunch.pdf.

[5] Allocations and Service Rules for 71–76 GHz, 81–86 GHz and 92–95 GHz Bands, WT Docket No. 02-146, Report and Order, 18 FCC Rcd 23318, 23322, ¶ 45 (2003) (2003 Order).

proximity to one another without causing interference."[6] Since 2004, Database coordination has more efficiently automated the registration and coordination process, including coordination with a corresponding database of federal links maintained by NTIA. Since 2004, the Commission has coordinated point-to-point ("PtP") links by certifying multiple commercial database operators under delegated authority. The certified database coordinators also compete to provide additional services such as link design, prior coordination, and interference analyses.[7]

The Commission should continue to expand on this light-licensing framework to accommodate the widest possible array of connectivity solutions, including FSS gateways. The record already indicates a consensus that broader and even dynamic coordination is feasible without risking harmful interference.[8] OTI and PK agree with the Dynamic Spectrum Alliance, which noted that there is "no technical reason why the 70/80 GHz database could not serve as a comprehensive repository of all non-Federal links, whether they are traditional fixed point-to-point links; links to, from, and between antennas in motion on ships or aircraft; or gateway links in a non-geostationary satellite network."[9]

OTI and PK similarly agree with SpaceX that the Commission's goal should be an "all-of-the-above" approach facilitated by a "unified light-licensing framework that accommodates

[6] Federal Communications Commission, "Wireless Bureau Opens Filing Window for Proposals to Develop and Manage Independent Database of Site Registrations by Licensees in the 71-76 GHz, 81-86 GHz and 92-95 GHz Bands," Public Notice (rel. March 12, 2004).

[7] *See* Federal Communications Commission, Keybridge Global Designated as a 70/80/90 GHz Database Manager (Aug. 26, 2016), https://www.fcc.gov/document/key-bridge-global-designated-708090-ghz-database-manager.

[8] *See* Ex Parte Letter from SpaceX, WT Docket No. 20-133, at 2-4 (Jan. 17, 2024) (citing and quoting 12 companies, trade associations and nonprofits filing in support of including FSS earth stations).

[9] Comments of the Dynamic Spectrum Alliance, WT Docket No. 20-133 (Aug. 5, 2020) at 3-4 ("Comments of DSA").

multiple co-primary services, including the fixed-satellite service."[10] We further agree with SpaceX that this would "best achieve the Commission's goal of facilitating deployment and coexistence of 'a myriad of innovative services' in the bands and would ensure that prospective uses of the band do not inhibit planned use of the spectrum by next-generation satellite services."[11]

The Commission's decision to include HAPs and new innovative services that deploy antennas on moving platforms suggests that FSS gateways should likewise be feasible and desirable, for a number of reasons. As the *FNPRM* recognizes, "a unified database may provide efficiencies for the use of these bands and may offer other benefits."[12] Notable among those efficiencies are to reduce the delay involved in a traditional, manual coordination of FSS earth stations under Part 25. Since FSS earth stations are co-primary, a database that efficiently coordinates them with Part 101 users in the band would provide greater certainty, accelerate deployment, and reduce costs for all band users. No change in licensing or in the Part 25 satellite service and technical rules is needed. The Part 25 application process for 70/80 GHz satellite earth stations "could mirror the existing light-licensing process under Part 101, permitting a satellite operator to obtain a nationwide, non-exclusive blanket satellite earth station license in the 70/80 GHz band conditioned on coordinating and registering earth stations on a first-come, first-served basis through the third-party link registration database."[13]

A related benefit is transparency: FSS operators, fixed terrestrial incumbents and emerging aeronautical links to endpoints in motion could all see more readily what other users

[10] Ex Parte Letter from SpaceX, WT Docket No. 20-133, at 1 (Nov. 8, 2021).

[11] *Ibid*.

[12] *FNPRM at* ¶ 87.

[13] Comments of Space Exploration Technologies Corp., WT Docket No. 20-133 (Nov. 8, 2023).

are in their vicinity. We agree with SpaceX that "providing a one-stop shop for co-primary users of the band to check the system for earlier-in-time deployments, rather than requiring fixed, aeronautical mobile, and fixed-satellite service operators to comb through the International Communications Filing System to determine where 70/80 GHz gateways have been licensed before registering their links."[14] Moreover, like all other services, satellite operators seeking to coordinate earth stations in the band should be required to obtain a nationwide license from the Commission before registering individual sites with a database administrator, and thereby establish a consistent basis for interaction with the database.

III. Expanding Access to the E-Band for Fixed-Satellite Service Gateways Would Benefit the Public Interest

The Commission can advance several key connectivity goals and further the public interest by extending access to the 70/80 GHz band for FSS gateways. As our groups and other commenters have previously opined, the 70/80/90 GHz Bands are valuable spectrum resources for non-geostationary satellite orbit ("NGSO") FSS operators to help bridge the digital divide in unserved and underserved areas. The 70/80/90 GHz Bands will be used to increase the capacity of NGSO FSS system gateway links, which will improve service quality for domestic and global customers alike.[15]

While access to the E-Band is certainly no silver bullet for closing the digital divide, consumers stand to benefit enormously from the band's potential to facilitate high-capacity

[14] SpaceX Jan. 17, 2024 Ex Parte at 4, *supra* note 8.

[15] *See, e.g.*, Comments of Satellite Industry Association, WT Docket No. 20-133, at 1-2 (Aug. 5, 2020) (noting that the 70 and 80 GHz bands "will be used as additional capacity for links to and from gateway earth stations to both [GSO] and [NGSO] satellites, making new content available to customers of all kinds across the country as part of the satellite systems that are now be[ing] designed."); Reply Comments of Kuiper Systems LLC, WT Docket No. 20-133, at 1-2 (Jan. 3, 2022).

broadband connectivity to rural and remote areas where internet access today is slow, spotty, or non-existent.[16] As SpaceX has noted, NGSO providers are "actively developing systems" that would leverage E-Band to facilitate "the expansion of faster, quality broadband services to the entire country" and bridge the digital divide.[17] This added capacity provided by 70/80 GHz gateways is particularly important to meet the needs of rural, remote, polar, and Tribal communities that currently rely on fixed-satellite service for broadband.[18] OTI and PK agree that the Commission should ensure that its expansion of access to the 70/80/90 GHz bands fully benefit all Americans, including those in rural and sparsely-populated areas.

The accommodation of FSS gateways also offers innovators the infrastructure needed to pursue solutions to connectivity challenges posed by extreme weather and topographical obstacles. In addition to better connectivity for consumers, NGSO constellations can use the band to help enable remote sensing networks and other enterprise and public sector IoT applications.

As is the case with all emerging technologies, neither stakeholders nor the Commission can predict in advance all the ways this very high-capacity band can be used to advance connectivity and the capabilities of moving platforms in the future. As a result, we believe that rules for this band should be technology-neutral and accommodate as many different services and users as possible will best set the stage for innovation in services and competition that produces the greatest long-term benefits to consumers and the economy.

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[16] Comments of SIA at 1-2; Reply Comments of Space Exploration Technologies Corp., WT Docket No. 20-133, et al., 5 (Sept., 4, 2020).

[17] Comments of Space Exploration Technologies Corp., WT Docket No. 20-133, et al., 3 (Aug. 5, 2020).

[18] *See* Attachment B to Letter from David Goldman, Space Exploration Technologies Corp., to Marlene H. Dortch, FCC, WT Docket No. 20-133, 7 (May 3, 2021) (describing deployment status of commercial Starlink service to "Alaskan homes and businesses," "remote, rural communities with un/underserved households," and "native tribes in the U.S. and Canada").

IV. Conclusion

The Commission should move expeditiously to expand access to the 70/80/90 GHz band to accommodate as many different use cases as feasible in the database coordination framework, including FSS gateways. The Commission should build on the band's history as a precedent and framework for open access and database-driven sharing to further promote innovative wireless technologies that provide both consumers and businesses enhanced connectivity in challenging environments, not only aboard airplanes, ships and other moving platforms, but also for FSS services that particularly benefit rural and sparsely-populated areas of the country. Encouraging the most intense and diverse use of this spectrum band is a common-sense policy move that promises to catalyze competition, support burgeoning connectivity solutions, and further the public interest.

Respectfully submitted,

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