



FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 1, 2, and 101

[WT Docket No. 20-133; DA 21-1263; FR ID 55689]

Wireless Telecommunication Bureau Seeks to Supplement the Record on 70/80/90 GHz Bands Notice of Proposed Rulemaking

AGENCY: Federal Communications Commission.

ACTION: Proposed rule; request for comments.

SUMMARY: In this document, the Commission seeks comment to supplement the record in the rulemaking on a Notice of Proposed Rulemaking to address the potential for use of the 71-76 GHz, 81-86 GHz, 92-94 GHz, and the 94.1-95 GHz (70/80/90 GHz) bands to provide broadband Internet access to consumers and communities that may otherwise lack robust, consistent connectivity. In particular, the Commission seeks comment on whether High Altitude Platform Stations (HAPS) or other stratospheric-based platform services could be deployed for this purpose in the 70/80/90 GHz bands. The Commission also seeks additional information regarding the potential use of these bands to provide broadband Internet access to customers on airplanes and aboard ships, as proposed by Aeronet Global Communications, Inc.

DATES: Submit comments on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. Submit reply comments on or before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: You may submit comments, identified by WT Docket No. 20-133, by any of the following methods:

- *Electronic Filers:* Comments may be filed electronically using the Internet by accessing the ECFS: www.fcc.gov/ecfs/.
- *Paper Filers:* Parties that choose to file by paper must file an original and one copy of

each filing.

Filings can be sent by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 45 L Street, NE, Washington DC 20554.
- Effective March 19, 2020, and until further notice, the Commission no longer accepts any hand or messenger delivered filings. This is a temporary measure taken to help protect the health and safety of individuals, and to mitigate the transmission of COVID-19. See FCC Announces Closure of FCC Headquarters Open Window and Change in Hand-Delivery Policy, Public Notice, 35 FCC Rcd 2788 (2020). <https://www.fcc.gov/document/fcc-closes-headquarters-open-window-and-changes-hand-delivery-policy>.

People with Disabilities. To request materials in accessible formats for people with disabilities (Braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer and Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

FOR FURTHER INFORMATION -CONTACT: Anthony Patrone, Broadband Division, Wireless Telecommunications Bureau, (202) 418-2428, Anthony.Patrone@FCC.gov. For information regarding the PRA information collection requirements that may be contained in this proposed rule, contact Cathy Williams, Office of Managing Director, at (202) 418-2918 or Cathy.Williams@fcc.gov.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's document (Public Notice), in WT Docket No. 20-133; DA 21-1263, released on October 8, 2021. The full text of this document is available on the Commission's website at

<https://docs.fcc.gov/public/attachments/DA-21-1263A1.pdf>. This document seeks to supplement the record of the Commission’s Notice of Proposed Rulemaking (*NPRM*), Modernizing and Expanding Access, 85 FR 40168, July 6, 2020, to the 70/80/90 GHz Bands, WT Docket Nos. 20–133; 10–153, 15–244; FCC 20–76; RMs–11824, 11825, adopted June 9, 2020, and released June 10, 2020. The *NPRM* may also be downloaded <https://docs.fcc.gov/public/attachments/FCC-20-76A1.pdf>.

Synopsis

I. BACKGROUND

1. As described in greater detail in the *70/80/90 GHz NPRM (85 FR 40168, July 6, 2020)*, in the United States, the 70/80/90 GHz bands are allocated on a co-primary basis for Federal and non-Federal use, variously for terrestrial, satellite, radio astronomy and radiolocation uses.¹ In 2003, the Commission established a two-step, non-exclusive licensing regime for non-Federal use of the 70/80/90 GHz bands. Users must first obtain a nationwide, non-exclusive license from the Commission, and then register individual links through a third-party database manager. Non-Federal licensees may use the 70/80/90 GHz bands for any point-to-point, non-broadcast service.

2. In June 2020, the Commission adopted the *70/80/90 GHz NPRM*, which sought comment on potential rule changes for non-Federal uses of the bands proposed by interested parties. Certain of these proposals, such as changes to antenna standards and link registration processes, were aimed at improving efficiency in traditional uses of the bands, such as wireless backhaul. Other inquiries contemplated use of the bands for new service offerings, such as Aeronet’s proposals that the Commission authorize point-to-point links to endpoints in motion to facilitate broadband service to ships and aircraft, provided that they do not cause interference to

¹ 47 CFR 2.106. *See also 70/80/90 GHz NPRM* at 6040–41, para. 2. The adjacent 76-81 GHz band is allocated for, among other uses, Radiolocation and licensed by rule under subpart M of part 95 (The 76-81 GHz Band Radar Service), which “may operate as vehicular radars, or as fixed or mobile radars in airport air operations areas, including but not limited to [foreign object debris] detection radars and aircraft-mounted radars for ground use.” 47 CFR 95.3331. The adjacent 86–92 GHz band is allocated for Earth Exploration-Satellite (passive), Space Research (passive), and Radio Astronomy services. *See, e.g., id., 70/80/90 GHz NPRM* citing 47 CFR 2.106 nn.US246, US74.

other authorized uses.² The Commission also sought comment on whether the 70/80/90 GHz bands could accommodate other types of services, such as High Altitude Platform Stations (HAPS) or similar services.³ In the record received in response to the *70/80/90 GHz NPRM*, several commenters expressed support for the provision of new services in these bands, including bringing broadband Internet access capabilities to areas where such access may not be consistently available. Other parties have expressed concerns about the introduction of new services in the bands.

II. DISCUSSION

3. In this document, the Commission provides an opportunity for commenters to supplement the record regarding the provision of new services in the 70/80/90 GHz bands.⁴ In particular, the Commission is interested in the feasibility of permitting HAPS or other stratospheric-based platform services in these bands and the Commission seeks comment on coordinating with incumbents in the band. The Commission’s rules define a “High Altitude Platform Station” as “[a] station located on an object at an altitude of 20 to 50 km and at a specified, nominal, fixed point relative to the Earth.”⁵

4. The Commission seeks further input on whether it should consider authorizing HAPS or other stratospheric-based platform services in any portion of the 70/80/90 GHz bands.⁶ How would HAPS be used in these bands? What sort of services would be provided or supported by these systems? The Commission also seeks comments on whether HAPS or other stratospheric-based platform services are likely to be commercially viable.⁷ Alternatively, are

² *70/80/90 GHz NPRM* at 6043–44, para. 7 (citing Aeronet Aviation Petition; Aeronet Maritime Petition).

³ *70/80/90 GHz NPRM* at 6059, para. 51.

⁴ The Commission notes that there are other issues raised by the *70/80/90 GHz NPRM* and subsequent record, such as changes to antenna standards and the link registration process, that the Commission does not address here. These issues remain under consideration by the Commission.

⁵ 47 CFR 2.1(c). See also RR 1.66A (“high altitude platform station: A station located on an object at an altitude of 20 to 50 km and at a specified, nominal, fixed point relative to the Earth.”). The Commission notes that the Elefante Group in 2018 sought Commission authorization to operate a stratospheric-based broadband service using platform stations operating just below the 20 km threshold set for HAPS. See Petition for Rulemaking of Elefante Group, Inc., RM-11809 (filed May 31, 2018). See also *Elefante Group Inc.’s Petition for Rulemaking to Enable Timely Deployment of Fixed Stratospheric-Based Communications Services in the 21.5-23.6, 25.25-27.5, 71-76 and 81-86 GHz Bands*, Report No. 3093, CG RM-11809 (2018).

⁶ Spectrum for HAPS in the frequency bands 47/48 GHz, 2 GHz, 27/31 GHz and 6 GHz was designated at three WRCs – WRC-97, WRC-2000 and WRC-12. After study for WRC-19, additional spectrum was identified: 31-31.3 GHz and 38-39.5 GHz globally, and in Region 2 (including US), 21.4-22 GHz and 24.25-27.5 GHz.

⁷ The Commission notes that several advocates for HAPS are no longer pursuing their planned operations. See Paresh Dave, *Alphabet Shutting Loon, Which Used Balloon Alternative to Cell Towers*, Reuters (Jan. 21, 2021) <https://www.reuters.com/article/us-alphabet-loon/alphabet->

stratospheric-based platform services likely to be developed to support non-commercial use, either for private, not-for-profit uses, or in support of local, state, or Federal governments?

5. The Commission also seeks comments on the potential for HAPS, or other stratospheric-based platform services, to cause harmful interference to incumbent or potential future services in these, or adjacent, bands including both terrestrial and satellite operations. Advocates for HAPS or similar services assert that they can coexist with incumbent users of the 70 GHz and 80 GHz bands and should be allowed to use these bands without an arbitrary ceiling, e.g., 50,000 feet, for nominally fixed or antennas in motion. If the Commission authorizes HAPS or other stratospheric-based platform services in these bands, are there any limitations or restrictions on the deployment of such services that the Commission should impose in order to guard against the potential for interference into incumbent operations, such as altitude restrictions, power limits, transmitter design considerations, directional constraints, additional emission limits, or other requirements, including new or revised coordination requirements? To aid other stakeholders in the bands, and the adjacent bands, to evaluate potential interference concerns and submit their own analyses, the Commission also seeks specific information about anticipated stratospheric-based platform system operating parameters including transmission direction, deployment densities, earth station elevation angles, station heights, antenna characteristics (e.g., antenna polarization, antenna pattern mask), station Equivalent Isotropically Radiated Power (EIRP), and operating bandwidths (including out-of-band performance).

6. In the *70/80/90 GHz NPRM*, the Commission also sought comment on the international coordination implications of the services proposed. The Wireless Telecommunication Bureau now specifically seeks comment on any international implications related to HAPS or other stratospheric-based platform services in the 70/80/90 GHz bands.

shutting-loon-which-used-balloon-alternative-to-cell-towers-idUSKBN29R02U; Adam Satariano, *Facebook Halts Aquila, Its Internet Drone Project*, New York Times (June 27, 2018) <https://www.nytimes.com/2018/06/27/technology/facebook-drone-internet.html>; Elefante Comments at 2 ("Due to unforeseen developments, Elefante Group is unable to state with certainty its ability at this time to advance its mission consistent with the vision set out in the Elefante Group Petition. Nonetheless, Elefante Group submits that the Commission should strive to preserve maximum flexibility and opportunities in its regulatory framework for the 70/80 GHz Bands.").

7. If the Commission does authorize HAPS or other stratospheric-based services in some or all of the 70/80/90 GHz bands, what service rules should apply? Could these new services be registered and coordinated through the existing third-party database manager process? The Commission seeks comments on what changes to the registration and coordination process would be necessary to facilitate the deployment of HAPS or other stratospheric-based services. The current 70/80/90 GHz coordination process only considers fixed systems. If HAPS is authorized, should it be limited to nominally fixed stations?

8. Relatedly, the Commission also seeks to further develop the record on Aeronet's proposal to permit the use of "Scheduled Dynamic Datalinks" (SDDLs). In the *70/80/90 GHz NPRM*, the Commission sought comment on how links to endpoints-in-motion could affect existing services in the 70/80/90 GHz bands. Several commenters filed comments and technical analyses supporting Aeronet's proposals, while several commenters express concern about potential interference to incumbents. In view of the concerns expressed, the Commission seeks further detailed technical studies demonstrating that deployment of SDDLs would not cause harmful interference to incumbents, co-primary users, adjacent band uses or potential future uses of the band, including FS, FSS, HAPS or other stratospheric-based platform services, and the adjacent band EESS (passive) and radio astronomy operations. To aid other stakeholders in the bands, and the adjacent bands, to evaluate potential interference concerns and submit their own analyses, the Commission also seeks specific information about anticipated SDDL system operating parameters, including station heights, antenna characteristics (e.g., antenna polarization, antenna pattern mask), station EIRP, operating bandwidths (including out-of-band performance), and ground station gains. In this context, the Commission notes that on October 4, 2021, Aeronet filed a coexistence analysis of its proposed SDDL system and the

Space X satellite system. The Commission seeks comments on this filing, including the extent to which it addresses the questions raised in this paragraph and related stakeholder concerns.

Federal Communications Commission.

Amy Brett,

Acting Chief of Staff,

Wireless Telecommunications Bureau.

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