



UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Communications
and Information
Washington, D.C. 20230

The Honorable Ajit Pai
Chairman
Federal Communication Commission
445 12th Street, SW
Washington, DC 20554

APR 11 2019

RE: Use of Spectrum Bands Above 24 GHz For Mobile Radio Services (GN Docket No. 14-177); Incentive Auction of Upper Microwave Flexible Use Licenses in the Upper 37 GHz, 39 GHz, and 47 GHz Bands for Next Generation Wireless Services (Auction 103; AU Docket No. 19-59)

Dear Mr. Chairman:

The National Telecommunications and Information Administration (“NTIA”), pursuant to Section 103(b)(2)(J) of the NTIA Organization Act, as amended, submits the following information for purposes of supplementing the record in the above-referenced “Spectrum Frontiers” proceedings and in response to the draft 5th R&O and draft *Auction 103 Public Notice* publicly released on March 22, 2019.¹ The rules and policies the Federal Communications Commission (“FCC” or “Commission”) expects to adopt in the draft 5th R&O would unlock access to an additional 1000 megahertz of spectrum in the 37.6-38.6 band (“Upper 37 GHz band”) in anticipation of an auction later this year pursuant to the draft *Auction 103 Public Notice*. The draft 5th R&O would not resolve issues concerning the 37.0-37.6 GHz band (“Lower 37 GHz band”). If adopted, it would also establish rules to allow operators in the Fixed-Satellite Service (“FSS”) to operate with individually licensed earth stations transmitting in the 50.4-51.4 GHz, but the Commission would wait to resolve more complex issues associated with authorizing fixed and mobile operations in this band.

This letter: (1) clarifies the coordination process under which the Department of Defense (DOD) will coordinate operations outside of the coordination zones for the Upper 37 GHz band; (2) addresses recent *ex parte* filings on DOD coordination and auction timing issues for the Upper 37 GHz band in light of the proposed restrictions that could be imposed on co-primary federal services in the band; and (3) supports the Commission’s further deferral of the resolution of issues concerning the terrestrial use of the Lower 37 GHz band and the 50.4-52.6 GHz band, but cautions against inadvertently and prematurely prejudging the outcome of ongoing

¹ See 47 U.S.C. § 902(b)(2)(J) (delegating to NTIA the “responsibility to ensure that the views of the executive branch on telecommunications matters are effectively presented to the [Federal Communications] Commission”); see also Use of Spectrum Bands Above 24 GHz For Mobile Radio Services, *FCC Fact Sheet and Draft Fifth Report and Order* in GN Docket No. 14-177, FCC-CIRC 1904-02 (Mar. 22, 2019) (“draft 5th R&O”); Incentive Auction of Upper Microwave Flexible Use Licenses in the Upper 37 GHz, 39 GHz, and 47 GHz Bands for Next Generation Wireless Services; Comment Sought on Competitive Bidding Procedures for Auction 103, *FCC Fact Sheet and Draft Public Notice* in AU Docket No. 19-59, FCC-CIRC 1904-01 (Mar. 22, 2019) (“draft *Auction 103 Public Notice*”).

international studies and discussions on how to adequately protect critical passive services in the adjacent 50.2-50.4 GHz and 52.6-54.25 GHz bands.

Upper 37 GHz Band Coordination. The 37-38.6 GHz band is *still* allocated on a primary basis to federal and non-federal fixed and mobile services and the federal Space Research Service (space-to-Earth) (SRS). In July 2016, NTIA recommended to the Commission ways to share this band with non-federal licensees and measures to adequately protect federal operations in the 37-38.6 GHz band and in the adjacent 36-37 GHz band.² The Commission adopted these recommendations in the Spectrum Frontiers *1st R&O* in pursuit of meeting “the twin goals of expanding commercial access in this band while facilitating continued and expanded Federal use.”³ Specifically, it established the recommended coordination zones throughout the entire 37-38.6 GHz band for the 14 military sites and three scientific sites identified by NTIA, noting that Federal agencies still had the ability to add future sites on a coordinated basis.⁴ With regard to the Upper 37 GHz band, the Commission last June sought comment on “how best to accommodate coordination zones for future Federal operations at a limited number of additional sites.”⁵

As we conveyed earlier in this proceeding, NTIA cautions against establishing any new, overly restrictive coordination processes, which could have an adverse effect on the development of new services and next generation technologies for both federal and non-federal applications.⁶ We also noted the ongoing challenges federal agencies face to precisely define the extent and location of their future federal operations under the current U.S. Table of Frequency Allocations. DOD and the private sector are collaborating on multiple fronts to advance spectrum-based technologies for 5G and beyond.⁷ NTIA, DOD, and key industry players are also working

² See Letter from Paige R. Atkins, Associate Administrator, Office of Spectrum Management, NTIA to Julius Knapp, Chief, Office of Engineering and Technology, FCC (July 12, 2016), *available at* <https://www.fcc.gov/ecfs/filing/10712098427931> (2016 NTIA Letter). Passive sensors in the Earth exploration satellite service and SRS are authorized below 37 GHz and are protected under footnotes 5.550A and US550A of the U.S. Table of Frequency Allocations.

³ Use of Spectrum Bands Above 24 GHz For Mobile Radio Services, *Report and Order and Further Notice of Proposed Rulemaking*, 31 FCC Rcd 8014, 8056 ¶ 102 (July 14, 2016) (*1st R&O*); *see also id.* at 8070-71 ¶¶ 148-151.

⁴ *See id.* at 8070-71 ¶ 149, 8210-13 (Appendix A– § 30.205).

⁵ Use of Spectrum Bands Above 24 GHz For Mobile Radio Services, *Third Report and Order, Memorandum Opinion and Order, and Third Further Notice of Proposed Rulemaking*, 33 FCC Rcd 5576, 5605 ¶ 74 (June 8, 2018) (*3rd FNPRM*). At the same time, the Commission rejected several petitions for reconsideration of its decisions in the *1st R&O* concerning the 37 GHz band. *See id.* at 5592-93. We are aware of no party in this proceeding that sought to remove or modify the existing federal allocations in any part of this band.

⁶ *See 2016 NTIA Letter* at 4.

⁷ *See, e.g.,* Comments of the National Spectrum Consortium in NTIA Docket No. 181130999-8999-01, *Developing a Sustainable Spectrum Strategy For America’s Future* (Jan. 22, 2019), *available at* https://www.ntia.doc.gov/files/ntia/publications/nsc_rfc_response.pdf; Defense Advanced Research Projects Agency, Spectrum Collaboration Challenge, *available at* <https://www.spectrumcollaborationchallenge.com>.

together to coordinate operations across many frequency bands capable of supporting next generation wireless technologies, such as in the 3.5 GHz band and other mid-band frequencies.⁸

As the draft 5th R&O points out again, DOD will need to use the Upper 37 GHz band at additional sites, but these other locations cannot be specifically identified at this time. NTIA understands there are concerns that such uncertainty on the federal side could impact how potential non-federal bidders in the auction for spectrum in the Upper 37 GHz band value each license if, for example, the future expansion outside the current military coordination zones is generally unrestricted.⁹ We note, however, the Communications Act provides that the Commission's auction methodologies, among other objectives, must recover for the public "a portion of the value of the public spectrum resource made available for commercial use" (not the full value). The Commission cannot consider the expectation of auction revenues when prescribing area designations and other regulations.¹⁰ It must promote the purposes specified in Section 1 of the Communications Act including "the national defense."¹¹

NTIA therefore urges the Commission to reject pleas by potential bidders to effectively change the nature of the existing co-primary federal and non-federal allocations in the Upper 37 GHz band to forever constrain future DOD operations that support national defense and homeland security.¹² While no party has advocated for any additional modifications to the U.S. Table of Allocations to explicitly reallocate these frequencies to non-federal use, such proposed actions based, for example, on AWS-1 and AWS-3 approaches, would repurpose this band to non-federal use. Notwithstanding the potential impact on national defense capabilities, this would then trigger the notification and other requirements of the Commercial Spectrum Enhancement Act, as amended.¹³ To reduce uncertainty for DOD and prospective licensees, NTIA proposes that the 5th R&O clarify under what circumstances and processes DOD and other Federal users may seek access through coordination, under the current allocations, to the Upper 37 GHz band in areas outside of the sites listed in the Commission's rules and the adjustments requested below.

⁸ See, e.g., Remarks of David J. Redl, Assistant Secretary for Communications and Information, Mobile World Congress Americas (Sept. 12, 2018), available at <https://go.usa.gov/xmgx2>.

⁹ See, e.g., Comments of AT&T Services, Inc. at 10-11 (filed Sept. 10, 2018), Comments of T-Mobile USA, Inc. at 15-16 (filed Sept. 10, 2018); Comments of CTIA at 15-16 (filed Sept. 10, 2018).

¹⁰ See 47 U.S.C. § 309(j)(3)(C), (4)(C), and (7)(A).

¹¹ 47 U.S.C. § 151, cross-referenced in *id.* at § 309(j)(3).

¹² See, e.g., Letter from Steve B. Sharkey and John Hunter, T-Mobile USA, Inc. to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-177 (Apr. 5, 2019) (*citing* the AWS-1 and AWS-3 "sharing regimes" as a better way of "providing commercial interests with the certainty they need"); Letter from Stacey Black, AT&T Services, Inc. to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-177 (Apr. 4, 2019) (advocating for language that would allow a commercial licensee to deny any federal access request if "the requested use carries a significant risk of harmful interference to current or planned deployments").

¹³ See 47 U.S.C. § 923(g)(2)(B), (4)(A). These statutory provisions define "eligible frequencies" as "any . . . band of frequencies reallocated from Federal use to non-Federal use or to shared use after January 1, 2003, that is assigned by competitive bidding pursuant to section 309(j) of the Communications Act of 1934." *Id.* at § 923(g)(2)(B).

In order to accommodate the needs of the military in the Upper 37 GHz band, DOD may submit to NTIA requests to coordinate access to the band at additional locations (*e.g.*, military bases and ranges). Each request will include a description of the proposed applications, technology, and other information required under Chapter 10 of the NTIA Manual of Regulations and Procedures for Federal Radio Frequency Management.¹⁴ DOD is also willing to limit such requests to proposed operations that cannot be accommodated in the Lower 37 GHz band.¹⁵ NTIA and FCC staff will review the DOD requests to assess any potential impact on non-Federal licensees, contact the impacted licensees (and other parties in interest), and facilitate coordination as necessary. If coordination is successful, NTIA would provide the applicable military departments appropriate certifications of spectrum support along with any new or revised frequency assignments. We will also encourage DOD and other federal users to focus initial efforts to develop use cases and technical solutions in the Lower 37 GHz band or through other negotiated arrangements or partnerships with FCC licensees, taking advantage of commercial equipment operability requirements imposed by FCC rules, advanced antenna technology, and adaptive power control techniques throughout the millimeter wave bands.¹⁶ However, we do not believe that federal spectrum access requirements in these bands can be accommodated solely through secondary market transactions with non-Federal licensees, especially those related to defense and national security applications.

On behalf of DOD, NTIA proposes in the enclosure minor adjustments to the Table to Paragraph (b) in Section 30.205 of the FCC's rules to ensure sufficient protection is available for DOD operations in the China Lake, CA coordination area (including nearby Edwards Air Force Base) without affecting any Upper 37 GHz licensees' access to the surrounding population in southern California. Specifically, a single coordination zone would replace the four overlapping China Lake coordination zones currently listed in Section 30.205(b). This would have no net increase in the potential affected population (36,832) in the area that is already subject to coordination. A new coordination zone around Edwards Air Force Base would encompass only a 20-kilometer radius to minimize any additional populated areas that would potentially be subject to coordination.

50 GHz Band. The draft 5th R&O would take limited action regarding the 50.4-52.6 GHz ("50 GHz") band. Specifically, it would allow FSS operators to operate with individually licensed earth stations transmitting in the 50.4-51.4 GHz band using the same criteria the Commission applies to the 24.75-25.25 GHz band. The rationale set forth in the draft 5th R&O to support particular limitations it would place on satellite operations would include the need for future coexistence with terrestrial licensees. However, the Commission should emphasize that the

¹⁴ Procedures for the Review of Telecommunication Systems for Frequency Availability, Electromagnetic Compatibility (Sept. 2017 Rev. of May 2016 Ed.), *available at* https://www.ntia.doc.gov/files/ntia/publications/redbook/2017-09/10_17_9.pdf.

¹⁵ NTIA, FCC, and DOD staff are continuing discussions on how to effectuate usage of the co-primary allocations in the Lower 37 GHz band. They are working to develop rules that would provide priority access to military and other Federal users in the 37.0-37.2 GHz segment. This approach would facilitate shared use of the Lower 37 GHz band while avoiding the need to add sites in the Upper 37 GHz band.

¹⁶ *See, e.g.*, 47 CFR § 30.208.

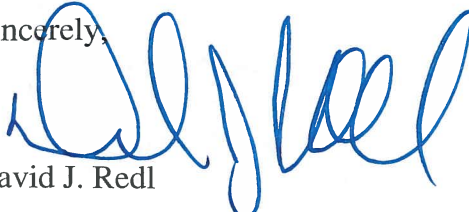
status of the 50 GHz band remains *under consideration* for future licensing in accordance with the Part 30 Upper Microwave Flexible Use Service (UMFUS) rules.¹⁷

As the draft item would make clear, “establishing UMFUS service rules will require [the FCC] to address issues concerning sharing with co-primary Federal services in the 50.4-52.6 GHz band, as well as protection of passive services in the adjacent 50.2-50.4 GHz and 52.6-54.25 GHz bands.”¹⁸ The latter issue of protection of adjacent passive services from mobile systems remains outstanding and NTIA reminds the Commission that protection of passive services has not been resolved internationally in terms of whether a guard band, Resolution 750 limits,¹⁹ or a combination of both will be required, or will be sufficient, to protect vital government spaced-based assets in these bands. The Commission must not prematurely reach an outcome that does not adequately protect them and may jeopardize essential federal systems that provide critical government services without adequate scientific justifications. We note that current levels proposed by the Commission for the protection of passive systems from mobile wireless services in other bands have not proven sufficient to protect such systems and NTIA and the Commission are working collaboratively on studies to establish the needed protection limits.

Critically, 50.2-50.4 GHz is a calibration band for space-based weather and atmospheric measurements, making it especially vital that the U.S. ensure that mobile systems do not cause interference into this band. Put simply, moving forward with UMFUS licensing will not be possible if these assets critical to U.S. economic and national security cannot be protected.

If you have any questions about this submission, please do not hesitate to contact me or Peter Tenhula, Acting Associate Administrator, Office of Spectrum Management, at 202-482-9142 or ptenhula@ntia.gov.

Sincerely,



David J. Redl

Enclosure

cc: Frederick Moorefield, Jr., DOD, Office of the Chief Information Officer

¹⁷ See draft 5th R&O at ¶ 11.

¹⁸ *Id.*

¹⁹ International Telecommunication Union *Radio Regulations*, Resolution 750 (Rev.WRC-15), Compatibility between the Earth exploration, satellite service (passive) and relevant active services.

ENCLOSURE

This enclosure provides minor adjustments to the Table to Paragraph (b) in Section 30.205 of the FCC's rules.

Coordination Areas for Federal Terrestrial Systems

Location	Agency	Coordination Area (Decimal Degrees)
China Lake, CA*	Navy	50 kilometer radius centered on latitude 35.614781 and longitude -117.454309
Edwards Air Force Base, CA**	Air Force	20 kilometer radius centered on latitude 34.922905 and longitude -117.891219

* This would replace the four overlapping areas for China Lake. Estimated population within the current 30-kilometer circles and the new 50-kilometer circle are the same (36,832). *See* Figure 1.

** This would be added to cover the area south of China Lake at Edwards Air Force Base and avoid expansion of the China Lake coordination area. Estimated population within this 20-kilometer circle is 2,228 (compared to 39,646 if it was 30 kilometers like the other ones listed in the existing Table). *See* Figure 2.

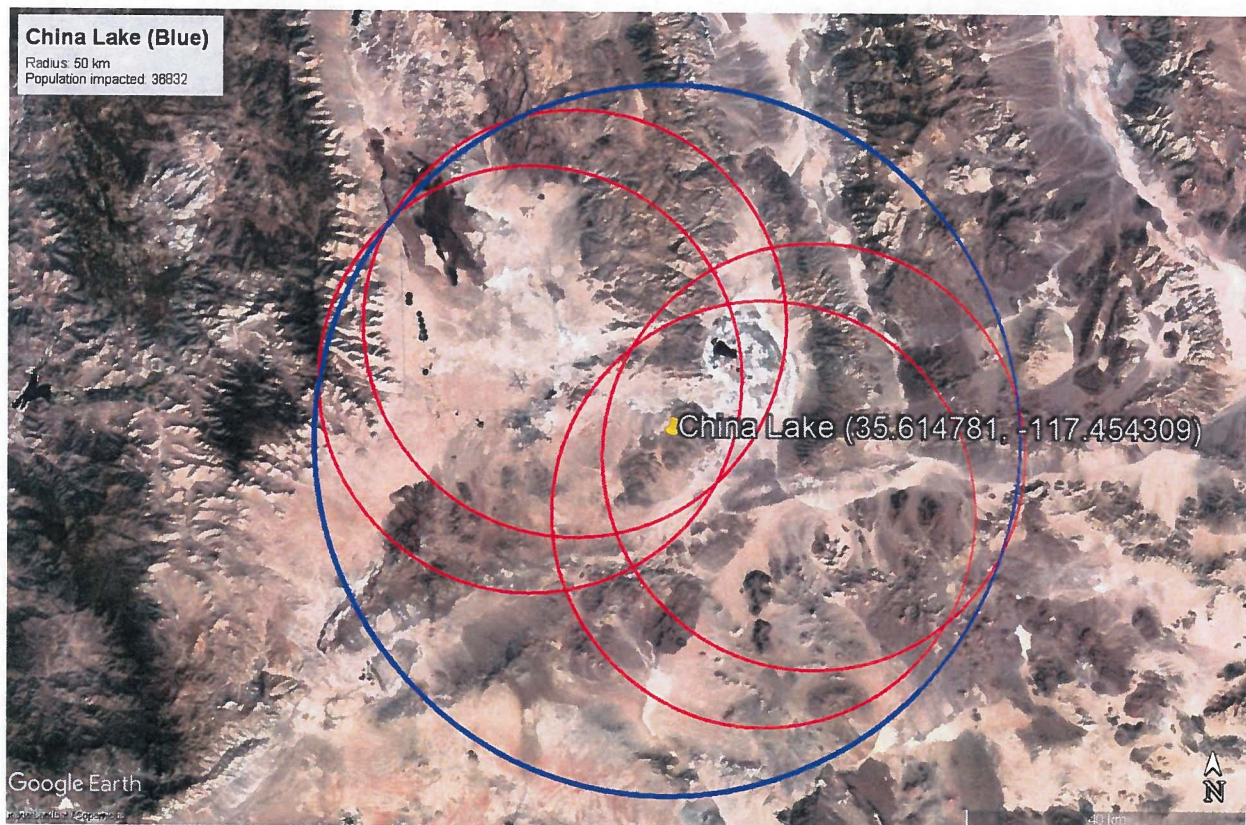


Figure 1.

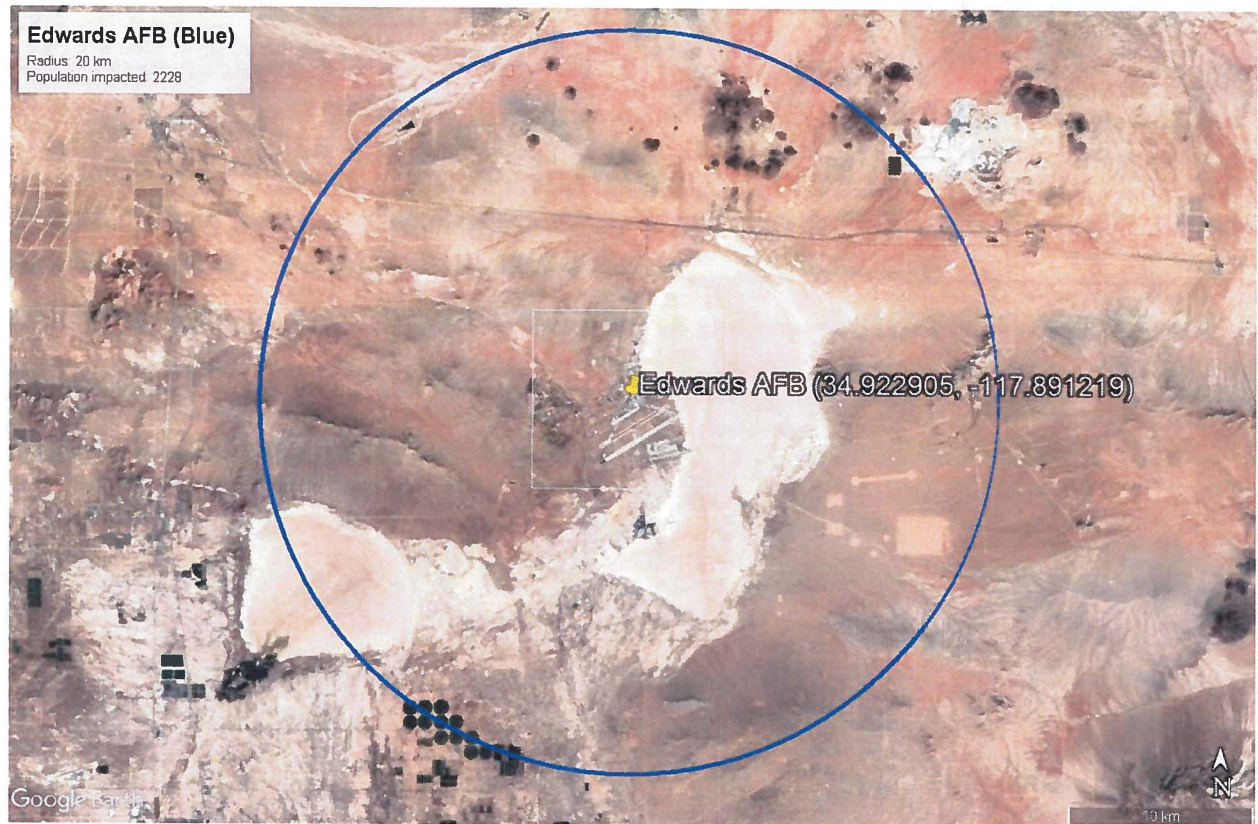


Figure 2.