

**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
)	
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
)	

COMMENTS OF AT&T SERVICES, INC.

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COMMENTS OF AT&T SERVICES, INC.

I. INTRODUCTION AND SUMMARY

AT&T Services, Inc., on behalf of the subsidiaries and affiliates of AT&T Inc. (collectively, "AT&T"), hereby submits the following comments in response to the Federal Communications Commission's ("Commission" or "FCC") Second Further Notice of Proposed

Rulemaking (“*Spectrum Frontiers Second FNPRM*”) in the above-captioned proceeding.¹ In the *Spectrum Frontiers Second FNPRM*, the Commission sought input on a variety of issues to further its objective of unlocking millimeter wave (mmW) spectrum bands for flexible use, including service, performance, and operability requirements for the 24 GHz band and spectrum holding rules for the 28 GHz, 37 GHz, and 39 GHz bands. As explained in greater detail below, AT&T encourages the Commission to adopt light-touch rules for any mmW spectrum bands it makes available for auction, ensuring that licensees have the flexibility to make the investment necessary to make these bands a flourishing ecosystem of innovative 5G, Internet of Things, and other advanced spectrum-based services.

II. WHILE THE *SPECTRUM FRONTIERS SECOND REPORT AND ORDER* IS AN IMPORTANT STEP TO ENSURE U.S. LEADERSHIP IN 5G AND MMW SERVICES, THE FCC MUST CONTINUE ITS EFFORTS TO ALLOCATE AND LICENSE ADDITIONAL UPPER MICROWAVE FLEXIBLE USE SERVICE SPECTRUM

The FCC’s *Spectrum Frontiers Second Report and Order* was a milestone that significantly advanced the Commission’s policy goal of ensuring U.S. leadership in 5G services. While AT&T may not agree with every policy outcome in the *Spectrum Frontiers Second Report and Order*, these and other timely decisions are key to laying a foundation to support new technologies and business models and enable the United States to continue its global leadership in mobile broadband services. As discussed below, AT&T urges the FCC to continue the momentum it has achieved as it considers prompt auctions of Upper Microwave Flexible Use Service (“UMFUS”) bands and applying flexible use policies to new bands going forward.

¹ *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services, et al.*, GN Docket No. 14-177, et al., Second Report and Order, Second Further Notice of Proposed Rulemaking, Order on Reconsideration, and Memorandum Opinion and Order, FCC 17-152 (2017) (*Spectrum Frontiers Second Report and Order* or *Spectrum Frontiers Second FNPRM*).

As noted, AT&T supports a number of the pivotal rules adopted by the Commission in the *Spectrum Frontiers Second Report and Order*. In particular, AT&T agrees with the FCC’s decision to institute geographic area licensing on a Partial Economic Area (PEA) basis for the 47.2-48.2 GHz band and its decision to add both the upper and lower segments of the 24 GHz to the new Part 30 UMFUS. These decisions are consistent with the Commission’s licensing approach in other mmW bands and will encourage the rapid deployment of innovative services in these bands. At the same time, however, the Commission imposed unnecessary constraints on mmW spectrum flexibility that may result in unintended consequences. AT&T previously observed that ultra-wide bandwidths of 200 megahertz or more are necessary to meet the technical requirements for 5G and the predicted explosive growth in demand for mobile broadband capacity. But instead of adopting broad channelization for these bands, the Commission limited channel sizes to 100 megahertz, which could limit efficiency if providers are unable to aggregate licenses into broader contiguous bandwidths. The Commission also adopted a reduced band plan for the 24 GHz band that reflected this limitation, a marked difference between the draft version of the item and the adopted version.²

AT&T encourages the Commission to take a multi-faceted approach to accelerating the deployment of 5G and ensuring that the United States continues to be a leader in advanced

² *Compare Use of Spectrum Bands Above 24 GHz for Mobile Radio Services, et al.*, GN Docket No. 14-177, et al., Second Report and Order, Second Further Notice of Proposed Rulemaking, Order on Reconsideration, and Memorandum Opinion and Order, FCC-CIRC1711-02, ¶ 33 (2017), available at https://apps.fcc.gov/edocs_public/attachmatch/DOC-347449A1.pdf (“We will license the 24 GHz band according to the second option that the Commission proposed. The lower segment (24.25-24.45 GHz) will be licensed as one 200 MHz channel, and the upper segment (24.75-25.25) will be licensed as one 100 MHz channel and two 200 MHz channels.”), with *Spectrum Frontiers Second Report and Order*, ¶ 34 (“We will license the 24 GHz band as 100 megahertz channels. The lower segment (24.25-24.45 GHz) will be licensed as two 100 megahertz channels, and the upper segment (24.75-25.25) will be licensed as five 100 megahertz channels.”).

wireless technologies and services. Chairman Pai has indicated his intent to continue the forward momentum in the mmW spectrum bands by issuing the next *Spectrum Frontiers* item “in the first half of [2018].”³ The Commission should include in that item, for example, auction rules for the spectrum bands already allocated for UMFUS and for which service rules have already been adopted, regardless of the status of the upfront payment deposit issue.⁴ Specifically, the Commission should prioritize the auction of the 28 GHz, 37 GHz, and 39 GHz bands allocated in the initial *Spectrum Frontiers Report and Order*. To the extent additional bands can be auctioned concurrently, including those identified in the *Spectrum Frontiers Second Report and Order*, the Commission should do so, but it should not delay the auction of the initial spectrum bands that have been laying in inventory for several years.

The Commission should also adopt service rules for the additional bands it has highlighted as potentially suitable for flexible uses. Though the Commission implemented service rules for the 24 GHz band and the 47.2-48.2 GHz band in the *Spectrum Frontiers Second Report and Order*, it proposed to reallocate to UMFUS a number of additional bands in the previous NPRM, including the 32 GHz, 42 GHz, and 50 GHz bands, as well as bands above 95 GHz.⁵ The Commission should work expeditiously to reallocate those bands for mmW services

³ See *Spectrum Frontiers Second Report and Order*, Statement of Chairman Ajit Pai.

⁴ See *Spectrum Frontiers Second Report and Order*, ¶ 6.

⁵ See *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services, et al.*, GN Docket No. 14-177, et al., Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 8014, 8081, ¶ 370 et seq (2017) (*Spectrum Frontiers Report and Order* or *Spectrum Frontiers FNPRM*).

in the future and ensure a continuing pipeline of spectrum for wireless broadband services.⁶ In addition, it has recently become clearer that a number of nations are looking at allocations for 5G in the 26 GHz band—the spectrum between the top end of the 24 GHz band and the low end of the 28 GHz LMDS band already allocated to UMFUS. This would form a large continuous allocation of intentionally harmonized 5G millimeter wave spectrum, so dedicating that spectrum for mobile and fixed use on a flexible basis should be explored on an expedited basis.

Finally, the Commission should advance efforts to develop sharing rules and protocols for the 37-37.6 GHz band. The 600 MHz at the bottom of the 37 GHz band was dedicated to licensed-by-rule shared use in the Commission’s original *Spectrum Frontiers Report and Order*.⁷ Commercial fixed and mobile use of that band, however, is co-primary with Government systems, and the Commission indicated that “the Wireless Bureau and Office of Engineering and Technology will, in collaboration with NTIA and Federal stakeholders, work with industry stakeholders and other interested parties to further define the sharing framework.”⁸ Given the natural potential synergies that exist between shared systems at 37-37.6 GHz and the licensed systems above 37.6 GHz, AT&T urges the FCC, in conjunction with NTIA, to move forward with public meetings and solicitation of proposals on opening the band for use.

⁶ See Letter from Scott K. Bergmann, Vice President, Regulatory Affairs, CTIA, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-177 et al. (July 14, 2017) (outlining a detailed roadmap for high band spectrum for the additional spectrum bands above 24 GHz).

⁷ See *Spectrum Frontiers Report and Order*, ¶ 111 et seq.

⁸ *Id.*, ¶ 115.

III. THE COMMISSION SHOULD ALLOW BROADER FSS USE OF THE 24 GHZ BAND

AT&T generally supports the Commission's proposal to allow broader Fixed-Satellite Service ("FSS") use in the 24.75-25.25 GHz ("24 GHz") band based on its understanding and analysis that co-frequency Broadcasting-Satellite Service ("BSS") feeder links will remain protected.⁹ Footnote NG535 to the U.S. Table of Allocations currently prioritizes BSS feeder links over all other FSS uses in the 24.75-25.05 GHz band and limits use of the 25.05-25.25 GHz band to BSS feeder links only.¹⁰ The Commission proposed to eliminate this footnote and the Appendix F orbital-location restrictions for 17/24 GHz space stations specified in Section 25.262(a) to provide operators with additional uplink capacity and increased flexibility to develop FSS systems in the new sharing regime. At the same time, AT&T appreciates that the Commission's proposal appropriately recognizes the importance of protecting BSS operations in the 24 GHz band. AT&T agrees with the Commission that the two-degree spacing rules should adequately protect BSS feeder links from other FSS earth stations in the 24 GHz band.¹¹

That all being said, there appears to be no reason why expanded FSS use of the 24.75-25.05 GHz band could not be accomplished consistent with retaining BSS priority in the band under NG535. Instead of deleting NG535 in its entirety, the Commission could accomplish its goals by merely deleting subsection (b) of NG535 and without broadly determining to license FSS on a co-primary basis with BSS. Simply deleting the limitation on use to BSS would allow broader and more flexible FSS use of the 24 GHz band while simultaneously, and importantly,

⁹ See *Spectrum Frontiers Second FNPRM*, ¶ 94.

¹⁰ 47 C.F.R. § 2.106.

¹¹ See *Spectrum Frontiers Second FNPRM*, ¶ 94.

protecting the significant investments that operators have made in developing innovative BSS systems in the band.

Moreover, the Commission should ensure that the rules governing the 24 GHz band are consistent with those governing the 28 GHz band, where the Commission has refrained from licensing FSS on a co-primary basis with UMFUS. As the Commission previously highlighted, “the 28 GHz band will play a vital role in the deployment of advanced mmW services, and fully upgrading FSS under our service rules to co-primary status would be inconsistent with this goal and would be unnecessary to meet the FSS community’s needs.”¹² This same rationale holds true for the 24 GHz band.

IV. THE COMMISSION SHOULD REFRAIN FROM ADOPTING A ONE-SIZE-FITS-ALL APPROACH TO PERFORMANCE AND BUILDOUT REQUIREMENTS FOR UMFUS LICENSEES

The Commission should refrain from imposing restrictive performance and buildout requirements on licensees in the mmW bands. As the Commission has observed, traditional performance and buildout metrics will not neatly apply to the potential innovative services that are expected to be deployed in these bands, including “Internet of Things” type services. As the Commission previously recognized, crafting performance metrics tailored to novel deployments or other innovative services is difficult, especially since “the relevant technologies and use cases are still being developed.”¹³ For example, 5G use cases and services are still being designed, and deployments will be driven by small cell network builds, meaning that urban and rural use cases may differ significantly. Since 5G service remains relatively undefined and standards have not been completed, the Commission should not adopt buildout or performance requirements that

¹² See *Spectrum Frontiers Report and Order*, ¶ 50.

¹³ See *Spectrum Frontiers Second FNPRM*, ¶ 98.

may be preclude certain use cases, thereby stymieing innovation and development of new services.

Instead, the Commission should broaden its construction rules for UMFUS to a substantial service regime—a simple, flexible approach that accounts for these variances. AT&T encourages the Commission to adopt a case-by-case approach that allows licensees to submit alternative showings of performance and buildout for review by the Commission. Any alternative showing accepted by the Commission should not only ensure that the spectrum bands are being utilized effectively, but also recognize the technical characteristics of these bands. Additionally, as use cases are further defined, the Commission should revisit the performance and buildout requirements, and potentially develop “safe harbors” that are tailored to specific types of implementations—some of which may be usage-based—that provide non-exclusive means for licensees to meet these requirements. For example, the Commission should commit to initiating a proceeding before the midpoint of the license term to evaluate the specific business models that have developed and use that information to determine whether or not additional safe harbors are necessary. Such an approach would spur innovation and investment by enabling licensees to trial a wide range of commercial rollouts to determine the best uses for the mmW bands, while providing them with greater confidence that their chosen deployment path will pass muster with the Commission.

V. STRICT MOBILE SPECTRUM HOLDINGS RULES ARE UNNECESSARY AND CASE-BY-CASE REVIEW WILL BETTER ENSURE THAT SPECTRUM IS PROPERLY UTILIZED

A. The Commission Appropriately Rejected a Pre-Auction Limit of 1250 Megahertz for New UMFUS Spectrum

AT&T supports the Commission’s decision to refrain from adopting a pre-auction limit of 1250 megahertz in the 24 GHz and 47 GHz bands, and encourages the Commission to follow

the same approach for the 28 GHz, 37 GHz and 39 GHz bands by eliminating the pre-auction limits adopted in the *Spectrum Frontiers Report and Order*.¹⁴ The Commission must harmonize auction rules across all mmW spectrum bands in order to facilitate innovation and promote the efficient use of spectrum.

As AT&T previously observed, spectrum holding limits potentially foreclose a licensee of one mmW band from acquiring needed spectrum in another mmW band, thereby restricting the utility of the bands. For example, if one licensee's holdings are exclusively in the 37-39 GHz bands while another licensee has exclusively 28 GHz band licenses, applying the same pre-auction threshold to both licensees could build in competitive advantages that should be taken into consideration. Moreover, there is no compelling reason to employ a more rigorous standard for mmW spectrum auctions than the Commission has for the spectrum auctions it has conducted over the past decade that have allowed large numbers of licensees to win spectrum.

B. The Commission Should Avoid Harming the Auction Process by Conducting Post-Auction Case-by-Base Review

The Commission's proposal to enact a case-by-case review of mmW spectrum holdings to post-auction applications for initial mmW licenses is not only unnecessary but would significantly harm the auction process. As has been demonstrated by the Commission's numerous successful spectrum auctions, the auction mechanism itself inherently ensures that spectrum is put to its highest value use and has resulted in spectrum being acquired by multiple licensees of all sizes. Indeed, there is no record of any FCC auction resulting in any degree of anticompetitive harm, notwithstanding the absence of spectrum caps or post-auction, case-by-case review. Moreover, if the Commission were to require applicants to bid without the certainty

¹⁴ *Spectrum Frontiers Report and Order*, ¶¶ 183-84.

of actually receiving the licenses on which they bid, it would complicate the auction process and may temper participation and competition in the auction.

C. The Commission Should Continue its Case-by-Case Review of Secondary Market Transactions

AT&T agrees, however, that the Commission should continue its practice of conducting case-by-case review of secondary market spectrum acquisitions.¹⁵ In a similar vein, AT&T supports the increase of the secondary market spectrum threshold to 1850 megahertz, as well as the Commission’s efforts to harmonize the treatment of mmW bands with that of other spectrum bands. As the Commission recognized, the “secondary market mmW spectrum threshold, in contrast to a pre-auction limit, does not establish a bright line that would prohibit a provider from acquiring spectrum.”¹⁶ This is the appropriate approach, as it provides necessary flexibility to potential licensees, while also allowing the Commission to employ a case-by-case analysis to identify markets that may warrant further competitive analysis.

VI. THE COMMISSION’S PROPOSED OPERABILITY REQUIREMENT FOR THE 24 GHz BAND IS CONSISTENT WITH THE PRIOR UMFUS RULES

To the extent the Commission determines that operability requirements are necessary, AT&T supports the Commission’s proposed approach in the 24 GHz band. Such an approach would harmonize the 24 GHz band with the operability requirements the Commission adopted for the 28 GHz, 37 GHz, and 39 GHz bands in the *Report & Order*. However, AT&T cautions

¹⁵ See, e.g., *Application of Cellco Partnership d/b/a/ Verizon Wireless and XO Holdings for Consent to Transfer Control of Local Multipoint Distribution Service and 39 GHz Licenses*, Memorandum Opinion and Order, DA 17-1154, ¶ 19 (Nov. 29, 2017); *Application of Verizon Communications, Inc. and Straight Path Communications, Inc. for Consent to Transfer Control of Local Multipoint Distribution Service, 39 GHz, Common Carrier Point-to-Point Microwave, and 3650-3700 MHz Service Licenses*, Memorandum Opinion and Order, DA 18-52, ¶¶ 21-22 (Jan. 18, 2018).

¹⁶ *Spectrum Frontiers Second Report and Order*, ¶ 74.

against adopting an overly burdensome operability requirement that would mandate operability across a range of mmW bands and potentially inhibit deployment of innovative service in these bands.

VII. CONCLUSION

AT&T supports the need for allocating additional spectrum for flexible uses and applauds the Commission for making 1.7 gigahertz of mmW spectrum available for such uses. While the Commission has taken a number of steps to advance the nation's position as a leader in advanced wireless services, more work remains to ensure that innovation flourishes in the mmW bands. AT&T encourages the Commission to move forward expeditiously in standing up auctions for mmW spectrum for which it already has established rules, and to develop a simple and flexible regulatory framework that encourages investment and opportunities in additional mmW bands.

Respectfully Submitted,

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