ITIF | INFORMATION TECHNOLOGY & INNOVATION FOUNDATION

700 K Street NW Suite 600
Washington, DC 20001

COMMENTS OF ITIF

Before the

Federal Communications Commission

Washington, D.C.

In the Matter of:	)	
	)	
	)	GN Docket No. 25-59
Upper C-Band (3.98 to 4.2 GHz)	)	
	)	
	)	

April 29, 2025

INTRODUCTION AND SUMMARY

The Information Technology and Innovation Foundation (ITIF) appreciates the opportunity to increase the productivity of 3.98–4.2 GHz (Upper C-band).[1] The Commission should maximize flexibility in its allocation policy and then leverage market mechanisms to facilitate the assignment of the band to the most productive use.

SPECTRUM POLICY PRINCIPLES: PRODUCTIVITY THROUGH MARKETS FOR FLEXIBLE RIGHTS

The Commission's goal in all spectrum policy should be to increase the productivity of scarce spectrum resources. This guiding star is no less true for the Upper C-band. The Commission should take seriously the interests of incumbent users but craft creative solutions that can make incumbents whole while also enabling new uses. Importantly, the Commission should not pick winners and losers among new uses. Rather, it should make the final allocation as flexible as possible, permitting diverse uses under a neutral set of technical rules. The Commission cannot possibly know the most productive application of the band today, much less years from now. Flexibility is, therefore, key to long-term productivity.

The final guiding principle the Commission should follow is enabling markets to assign and reassign the rights the FCC creates over time. Market prices are the best tool to convey information about the relative productivity of the alternative uses of spectrum, and, in the absence of transaction costs, they will naturally push spectrum to its most productive use. While we do not live in a world without transaction costs, it follows that the Commission should remove as many such costs as it can, including at the initial assignment phase and for future secondary markets. A more permissive approach to secondary market transactions will be more likely to result in productive arrangements of spectrum rights.

The Commission already conducted successful relocation and protection of incumbents in the Lower C-band, and, while the upper portion of the band presents more challenges, the same basic framework of market-driven reallocation is likely the best way to maximize the productivity of the upper part of the band, too.[2]

THE COMMISSION SHOULD ENABLE FLEXIBILITY THAT PERMITS BOTH MSS AND MOBILE USE OF CLEARED CAPACITY

Multiple industries have shown interest in this band, which is good evidence that it holds productive value in the proper regulatory scheme. Rather than viewing this proceeding as a means to pick a winning and a losing industry, the Commission should examine ways in which technological convergence and regulatory

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[1] Founded in 2006, ITIF is an independent 501(c)(3) nonprofit, nonpartisan research and educational institute—a think tank. Its mission is to formulate, evaluate, and promote policy solutions that accelerate innovation and boost productivity to spur growth, opportunity, and progress. ITIF's goal is to provide policymakers around the world with high-quality information, analysis, and recommendations they can trust. To that end, ITIF adheres to a high standard of research integrity with an internal code of ethics grounded in analytical rigor, policy pragmatism, and independence from external direction or bias. See About ITIF: A Champion for Innovation, https://itif.org/about; "Upper C-Band (3.98 to 4.2 GHz)," Federal Communications Commission, Notice of Inquiry (GN Docket No. 25-59, February 2025), https://docs.fcc.gov/public/attachments/FCC-25-13A1.pdf. ("NOI").

[2] "Expanding Flexible Use of the 3.7 to 4.2 GHz Band," FCC, Report and Order and Order of Proposed Modification, (GN Docket No. 18-122, March 2020), https://docs.fcc.gov/public/attachments/FCC-20-22A1.pdf.

innovations can facilitate additional flexibility in this band. For example, the rise of direct-to-device satellite service and the Commission's Supplemental Coverage From Space proceeding suggest that the choice between solely a terrestrial-mobile allocation or solely a satellite allocation may be a false one.[3] These technological and regulatory developments have blurred the lines between traditional allocation categories and suggest a path toward a new, more flexible type of allocation.

Indeed, now satellite companies provide service over spectrum nominally designated for terrestrial mobile use.[4] Given that such uses are possible after an initial mobile allocation, the Commission should consider whether conceptualizing such diverse uses should be part of its own initial allocation. Economically, there is no difference between when a satellite company contracts with a mobile licensee to provide satellite services to the licensee's customers and when the same satellite operator holds the license itself.[5]

This convergence is advantageous for increasing the flexibility of spectrum allocations. The optimal arrangement of these rights will likely be different in different circumstances and change over time, so the Commission should seek to enable flexibility at the outset so as to not stop or slow potentially productive rearrangements later.

THE COMMISSION SHOULD PROTECT, BUT NOT EXPAND, INCUMBENTS' RIGHTS

The Commission should adhere to evidence-based engineering analysis when evaluating the impact of potential reallocations on incumbent and adjacent systems. The Commission should promulgate an NPRM that provides clear guidance on the types of evidence needed as inputs to its policy decision. While the level of protection guaranteed to incumbent and adjacent systems should account for the criticality and risk tolerances of those systems, determining what technical parameters and limitations will provide that level of protection is a task for the Commission and should be based on realistic, evidence-based engineering analysis.

The Commission Should Preserve the Status Quo Rights of Fixed Service and Satellite Providers

As in the Lower C-band proceeding, the Commission should make incumbents whole after any reallocation, but that process can take different forms and should not involve expanding their rights. The Commission can protect current fixed links, for example, but not protect every potential change to those links in perpetuity. The Commission can compensate satellite providers in exchange for their moving out of the band, and that

[3] "Single Network Future: Supplemental Coverage from Space," FCC Report and Order and Further Notice of Proposed Rulemaking, (GN Docket No. 23-65, March 2024). https://docs.fcc.gov/public/attachments/FCC-24-28A1.pdf.

[4] *See e.g.*, "Space Bureau and Wireless Telecommunications Bureau Seek Comment on Filings of SpaceX and T-Mobile Requesting to Establish Supplemental Coverage from Space," FCC, Order and Authorization, (GN Docket No. 23-135, November 2024), https://docs.fcc.gov/public/attachments/DA-24-1193A1.pdf.

[5] Insofar as there are legal barriers to the auction of satellite spectrum, the Commission could maintain an SCS-style arrangement in which a mobile allocation is used by satellite operators so that no satellite allocation is assigned by competitive bidding; *see generally,* Section 647 of The Communications Satellite Act of 1962 (47 U.S.C. §765f).

process could include costs to switch to wireline or different frequencies. In the event of an auction, the two-sided mechanism used for the Lower C-band provides a good model for how to proceed.[6]

It should also be an option, however, to simply vest the newly created, flexible-use rights with the incumbents themselves and then let them contract with parties who can use the spectrum more efficiently. This process would essentially mimic the results of an auction since the party that would outbid all others (including the incumbent) at an auction would also make an offer that the incumbent would accept on the open market. Or conversely, an incumbent who declines a private offer would also beat that offer if it were bid at auction.

The Aviation Industry Should Prioritize Safety with High-Performing Altimeters

The spectrum at issue in this proceeding is not aviation spectrum. Nevertheless, the aviation industry and the traveling public have an interest in protecting the radio altimeters in the adjacent 4.2–4.4 GHz band. That protection should start with the altimeters themselves. Unlike in the previous proceeding, in which the aviation industry raised eleventh-hour concerns about mobile use of the Lower C-band affecting airlines' low-performing receivers, the aviation industry should take safety more seriously in this proceeding by voluntarily making their receivers as well-filtered as possible. Receiver performance is increasingly important as spectrum becomes more crowded, and more critical, safety-of-life systems should be most interested in ensuring those systems are resilient and high-performing, let alone that their receivers are not wide open to transmissions outside their assigned band.

Early and Continuous Multi-Stakeholder Engagement Will Be Essential

Some of the gaps that caused problems with the prior C-band proceeding were failures to stay informed or communicate clearly on a technical level throughout the process.[7] While not always in the Commission's control, the Commission should make efforts to ensure interested entities, including other regulatory bodies and standards organizations, are on notice about the FCC's possible actions. While the FAA, RTCA, and other relevant aviation industry groups should be aware of spectrum policy developments, the Commission should provide them with direct and clear notice of this NOI and future NPRMs so that they can make evidence-based arguments for or against a particular allocation in a timely manner. The Commission should also require parties seeking greater protection for out-of-band receivers to specify what retrofits or exclusion zones they would consider appropriate so that such claims can be tested and incorporated into the Commission's evaluation of the costs and benefits of potential reallocations.

CONCLUSION

To maximize the productive use of the Upper C-band spectrum, the Commission must take a proactive and strategic approach. By leveraging market mechanisms, engaging critical stakeholders, and ensuring robust technical standards, the Commission can facilitate an efficient and effective allocation of this valuable

[6] "Expanding Flexible Use of the 3.7 to 4.2 GHz Band," FCC, Report and Order and Order of Proposed Modification, (GN Docket No. 18-122, March 2020), https://docs.fcc.gov/public/attachments/FCC-20-22A1.pdf.

[7] Joe Kane et al., "Filling Gaps in US Spectrum Allocation: Reforms for Collaborative Management" (ITIF, Feb. 2023), https://itif.org/publications/2023/02/27/filling-gaps-in-us-spectrum-allocation-reforms-for-collaborativemanagement/.

resource. The lessons learned from the 3.7 GHz transition highlight the importance of early collaboration with industries such as aviation and satellite services to prevent unnecessary delays and interference concerns.

Furthermore, reinstating the Commission's spectrum auction authority is essential to enabling market-driven allocation and ensuring the best use of the Upper C-band. Without this authority, the ability to transition incumbents, fund necessary technological updates, and fully realize the economic and connectivity benefits of this spectrum will be severely limited. We urge Congress to restore this authority as soon as possible to allow the Commission to move forward with a well-structured, high-impact allocation process.

By prioritizing these actions, the Commission can ensure that the Upper C-band contributes meaningfully to expanding broadband access, fostering innovation, and supporting critical communications infrastructure for both terrestrial and satellite services.

Joe Kane
Director of Broadband and Spectrum Policy

Ellis Scherer
Research Assistant, Broadband and Spectrum Policy