

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Use of Spectrum Bands Above 24 GHz for)	GN Docket No. 14-177
Mobile Radio Services)	
)	
Amendment of Parts 1, 22, 24, 27, 74, 80, 90,)	WT Docket No. 10-112
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)	

REPLY COMMENTS OF FEDERATED WIRELESS, INC.

Federated Wireless, Inc. (“Federated Wireless”) hereby replies to the comments filed in response to the Third Further Notice of Proposed Rulemaking in the above-captioned proceeding.¹ Federated Wireless is pleased that the record in this proceeding clearly demonstrates the need for the Commission to adopt a coordination mechanism for the 37-37.6 GHz band (“Lower 37 GHz Band”) that enables early access to this spectrum while leveraging existing automation capabilities to ensure that the mechanism is responsive to the development and deployment of innovative use cases in the band. By doing so, and by declining to rely on legacy, static coordination mechanisms narrowly tailored to specific deployment scenarios, the Commission will expeditiously facilitate access to this valuable spectrum and ensure that the Lower 37 GHz Band fosters the innovative uses the Commission envisions.

¹ *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services, 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*, GN Docket No. 14-177, WT Docket No. 10-112, Third Report and Order, Memorandum Opinion and Order, and Third Further Notice of Proposed Rulemaking, FCC 18-73 (2018) (the Third Further Notice of Proposed Rulemaking, the “Third FNPRM”).

I. THE RECORD DEMONSTRATES THAT THE COMMISSION SHOULD ENSURE THE COORDINATION MECHANISM FOR THE LOWER 37 GHZ BAND IS RESPONSIVE TO EMERGING AND INNOVATIVE USE CASES AND ABLE TO SUPPORT DISPARATE USES AND DENSE OPERATIONS.

A number of commenters agreed with Federated Wireless that the Commission should adopt a coordination mechanism that facilitates early access to the Lower 37 GHz Band while incorporating automation of coordination and registration functions as well as the capability to enable more dynamic sharing functionalities as use of the band increases and evolves.

As Starry explained, “the Commission can continue to promote innovation and investment in the Band in the near-term by relying on simple geographic and frequency coordination now, and adding additional elements and tools, like database-enabled sharing, and beaconing and sensing, to facilitate sharing on a more granular and intensive scale.”² The Wireless Internet Service Providers Association similarly noted the Commission should “adopt rules that create a simple coordination mechanism that will evolve over time as the industry and technology of the band develop, streamline Part 101 frequency coordination, and craft effective and predictable Federal sharing rules based on the same coordination framework.”³

Federated Wireless agrees with Starry that, as use of the band intensifies and use cases emerge, “the Commission, industry, and federal users will gain significant experience and understanding of the technology, use cases, deployment models, and interference environment.

² Comments of Starry, Inc., GN Docket No. 14-177, WT Docket No. 10-112, at 6 (filed Sep. 10, 2018) (“Starry Comments”).

³ Comments of the Wireless Internet Service Providers Association, GN Docket No. 14-177, WT Docket No. 10-112, at 2 (filed Sep. 10, 2018).

As this education progresses, the Commission can and should continue to iterate on the licensing and coordination mechanisms.”⁴ In particular, Starry explains that:

[E]xisting database tools can be enhanced and modified to operate in this Band. These databases can use more predictable geographic and frequency information than sensing-based sharing. They can use the existing information regarding base stations that will be publicly available, and could make very reasonable assumptions about CPE characteristics based upon a technical analysis of the deployment models in the Band. In addition, they can offer a level of control to users that may not exist in a fully distributed sensing-based sharing environment. And, if properly synced across systems, a database could also enable time-based sharing by serving as a central clock for synchronization, again leveraging GPS time.⁵

Federated Wireless agrees with Starry’s observations and urges the Commission to ensure that the coordination mechanism adopted for the Lower 37 GHz Band is capable of layering on such database tools from the outset by requiring that the initial coordination mechanism automate functions such as interference modeling and site registration.

As a result, Federated Wireless continues to support the phased approach to coordination of shared spectrum use in the Lower 37 GHz Band proposed by Starry, provided that coordination of operations in the band leverage automation in both the initial and enhanced sharing phases. As the Open Technology Institute at New America (“OTI”) explained, such automation is crucial to ensure the coordination mechanism is capable of growing with the use of the band and does not become a bottleneck as deployments become more dense and complex, as the Starry proposal “could allow immediate use of the band – even if the coordination is only semi-automated initially – while also paving the way for the development of a more efficient and

⁴ Starry Comments at 6.

⁵ *Id.* at 12.

low-cost automated frequency coordination mechanism going forward.”⁶ The Dynamic Spectrum Alliance also highlighted the importance of automated functions in both the initial and enhanced sharing phases, pointing out that “Starry’s proposal lends itself to an automated coordination mechanism that would be far faster and [more] efficient, promoting more intensive use of the band at far lower costs while still protecting established users on a consistent basis.”⁷

In view of the evidence and significant support in the record demonstrating the need for a coordination mechanism that both enables expeditious access to Lower 37 GHz Band spectrum and is able to grow with use of the band, Federated Wireless encourages the Commission to adopt a mechanism that leverages automation from the outset and expressly contemplates the addition of additional, more dynamic coordination functions as more users and use cases deploy in the band. In doing so, the Commission can ensure that the coordination mechanism is responsive to the emergence of new use cases and the densification of operations in the band, and is able to dynamically coordinate and facilitate the densest possible spectrum use to ensure that this spectrum becomes the “innovation band” the Commission envisions.⁸

II. APPLYING EXISTING, STATIC COORDINATION MECHANISMS TO THE LOWER 37 GHZ BAND RUNS THE RISK OF IMPEDING THE DEVELOPMENT AND DEPLOYMENT OF INNOVATIVE USE CASES AND SERVICES.

A handful of commenters advocate for a more traditional, static coordination mechanism to facilitate sharing of the Lower 37 GHz Band. Intel Corporation (“Intel”) and Cisco Systems (“Cisco”) argue in favor of a sharing regime “fashioned after the proven successful 70/80 GHz

⁶ Comments of the Open Technology Institute at New America, GN Docket No. 14-177, WT Docket No. 10-112, at 3 (filed Sep. 10, 2018) (“OTI Comments”).

⁷ Comments of the Dynamic Spectrum Alliance, GN Docket No. 14-177, WT Docket No. 10-112, at 4 (filed Sep. 10, 2018).

⁸ Third FNPRM at ¶ 63.

model” currently used to coordinate and register fixed point-to-point links.⁹ This proposal is premised in large part on Intel and Cisco’s conclusion that “Given the straightforward initial sharing environment with few Federal incumbents and no non-Federal incumbents, the coordination framework for this Lower 37 GHz Band can and should be as simple and streamlined as is feasible.”¹⁰ The Telecommunications Industry Association similarly argues that the Commission should base the Lower 37 GHz Band coordination mechanism on the legacy 70/80 GHz model to implement sharing “using the simplest means necessary to enable Federal and non-Federal shared use of the bands.”¹¹ Ericsson and CTIA similarly offer conclusory arguments that “[p] roposals seeking more complex and/or dynamic sharing are unjustifiable for this band, and there is no reason to believe that a dynamic framework would be necessary or suitable in the future.”¹²

These arguments rest on the assumption that the existing 70/80 GHz coordination mechanism—designed for the sole purpose of coordinating and registering individual fixed point-to-point links pursuant to a nationwide, non-exclusive licensing regime—will suffice to support all types of deployments in the Lower 37 GHz Band. As the Commission and others have explained, however, little is known at this point about the expected prevailing uses of this spectrum, but the Commission has stated its expectation that there will be at least four different deployment scenarios on the non-Federal side alone:

⁹ Joint Comment of Intel Corporation and Cisco Systems, Inc., GN Docket No. 14-177, WT Docket No. 10-112, at 5 (filed Sep. 10, 2018).

¹⁰ *Id.* at 11.

¹¹ Comments of the Telecommunications Industry Association, GN Docket No. 14-177, WT Docket No. 10-112, at 3 (filed Sep. 10, 2018).

¹² Comments of CTIA, GN Docket No. 14-177, WT Docket No. 10-112, at 13 (filed Sep. 10, 2018); *see also* Comments of Ericsson, GN Docket No. 14-177, WT Docket No. 10-112, at 12 (filed Sep. 10, 2018)(“ A dynamic spectrum access database is neither necessary nor recommended.”).

[W]e anticipate that there will be at least four types of non-Federal deployments in the Lower 37 GHz Band: point-to-point links (for example backhaul and backbone links); fixed wireless broadband systems (generally consisting of a fixed access point and fixed subscriber units); single base station IoT-type systems (for example, in a factory); and carrier-based deployments of mobile systems using the Lower 37 GHz Band as supplemental capacity tied to other bands that are licensed on a geographic area basis.¹³

Moreover, neither the Commission nor any commenter knows how Federal users will operate in the Lower 37 GHz Band in the future.¹⁴ As a result, it is inappropriate to assume that such future Federal uses are compatible with the 70/80 GHz coordination mechanism proposed by these commenters to support certain expected commercial deployments. For example, should future Federal users seek to operate tactical radios or operate on a mobile basis in the Lower 37 GHz Band, the static 70/80 GHz coordination regime would be unable to address such uses. As OTI explained, such legacy coordination mechanisms “will not scale at low cost or in real time to handle the volume and complexity of fixed wireless coordination among the PtP, PtMP and other localized use cases the Commission envisions for the band.”¹⁵ It is thus crucial that the Commission ensure that the coordination mechanism adopted for the Lower 37 GHz Band is, from the outset, capable of adapting to future uses of the band, both those that are currently anticipated and those not yet contemplated, to ensure all such uses are supported in furtherance of the Commission’s goal of creating an “innovation band” in this spectrum.

¹³ Third FNPRM at ¶ 63.

¹⁴ *Id.* at ¶ 66 (stating the Commission’s intent to “work with NTIA, on behalf of Federal users, and with industry to identify those cases.”).

¹⁵ OTI Comments at 3-4.

III. CONCLUSION.

For the foregoing reasons, the Commission should adopt a coordination mechanism that automates early access to the Lower 37 GHz Band, will grow with the band, and will best facilitate spectrum access to support emergent Federal and non-Federal use cases as use of the band intensifies.

Respectfully submitted,

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