Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Expanding Flexible Use of the 3.7 to 4.2 GHz Band	)	GN Docket No. 18-122
	)	
Petition for Rulemaking to Amend and Modernize Parts 25 and 101 of the Commission's Rules to Authorize and Facilitate the Deployment of Licensed Point-to-Multipoint Fixed Wireless Broadband Service in the 3.7-4.2 GHz Band	)	RM-11791
Fixed Wireless Communications Coalition, Inc., Request For Modified Coordination Procedures in Band Shared Between the Fixed Service and the Fixed Satellite Service	)	RM-11788

COMMENTS OF DYNAMIC SPECTRUM ALLIANCE

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President
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August 7, 2019

COMMENTS

The Dynamic Spectrum Alliance ("DSA")[1] supports the Federal Communications Commission's proposal to both clear and share portions of the 3.7 to 4.2 GHz band. As the Commission explained in its July 2018 Notice of Proposed Rulemaking ("NPRM")[2], its efforts to make this mid-band spectrum available for more flexible use will help secure U.S. leadership in next-generation services, including fifth-generation (5G) wireless and the Internet of Things. The DSA continues to believe that allowing point-to-multipoint ("P2MP") sharing of the band can expeditiously help close the digital divide by providing wireless broadband connectivity to the unserved and underserved communities in the U.S., and we applaud the Commission's recent Public Notice asking for additional commentary on P2MP sharing.[3]

The DSA is on record in this proceeding recommending the Commission: (1) permit P2MP operations within each of the proposed sub-parts of the band -- coordinated access to locally-unused spectrum in the portion of the band where FSS operations will continue (potentially on a Part 101 basis), and opportunistic access to locally-unused spectrum in the flexible use portion of the band; (2) eliminate the outdated full-band, full-arc coordination regime; and (3) assign new flexible-use licenses through a

[1] The Dynamic Spectrum Alliance is a global, cross-industry alliance focused on increasing dynamic access to unused radio frequencies. The membership spans multinational companies, small- and medium-sized enterprises, academic, research, and other organizations from around the world, all working to create innovative solutions that will increase the utilization of available spectrum to the benefit of consumers and businesses alike. A full list of DSA members is available on the DSA's website at www.dynamicspectrumalliance.org/members/.

[2] *See Expanding Flexible Use of the 3.7-4.2 GHz Band, Order and Notice of Proposed Rulemaking,* 33 FCC Rcd 6915 (2018), 83 FR. 42043 (Aug. 20, 2018) (Order), 83 FR. 44128 (Aug. 29, 2018).

[3] *See Wireless Telecommunications Bureau, International Bureau, Office of Engineering and Technology, and Office of Economics and Analytics Seek Focused Additional Comment in 3.7-4.2 GHz Band Proceeding*. GN Docket No. 18-122, RM-11791, RM-11778, DA 19-678 (rel. July 19, 2019) (Public Notice).

public auction rather than delegating assignment to a private administrator engaging in opaque individual transactions and serving its narrow commercial interests.[4]

Further, in response to the Commission's June Public Notice, DSA has filed that: (1) the Commission has clear legal authority to auction the C-Band, to reimburse incumbent costs, and to modify FSS licenses and registrations as needed; (2) a large amount of unused spectrum is available in C-band for sharing now and even after FSS incumbents are consolidated into the upper portion of the band; and (3) access to this valuable spectrum can be managed through dynamic databases that exist today, allowing coordination for both licensed and opportunistic sharing, as well as ensuring the most efficient use of the band in favor of rural and underserved communities that stand to benefit the most if the FCC authorizes coordinated P2MP sharing.[5]

The Public Notice[6] seeks additional comment on recent filings by the "ACA Connects Coalition,"[7] AT&T[8], and Reed Engineering.[9] DSA's key takeaways are:

[4] Comments of the Dynamic Spectrum Alliance, *Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, GN Docket No. 18-122, FCC 18-91, at 3 (October 29, 2019) ("DSA Comments NPRM"); Reply Comments of the Dynamic Spectrum Alliance, *Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, GN Docket No. 18-122, FCC 18-91 (Dec. 11, 2019).

[5] Comments of the Dynamic Spectrum Alliance, Public Notice, GN Docket No. 18-122, at 11-19 (July 3, 2019) ("DSA Comments PN").

[6] *See Public Notice*.

[7] *See* Letter from ACA Connects, Competitive Carriers Association, and Charter Communications, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122 (filed July 2, 2019) (ACA Connects Coalition Proposal); Letter from Pantelis Michalopoulos, Counsel for ACA Connects, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122 (filed July 9, 2019), Attachment (Cartesian Study).

[8] *See* Letter from Henry Hultquist, Vice President, Federal Regulatory, AT&T Services, Inc., to Marlene Dortch, Secretary, FCC, GN Docket No. 18-122 (filed May 23, 2019) (AT&T May 23 Ex Parte). See also Letter from Raquel Noriega, Director, Federal Regulatory, AT&T Services, Inc., to Marlene Dortch, Secretary, FCC, GN Docket No. 18-122 (filed June 6, 2019) (AT&T June 6 Ex Parte).

[9] *See* Letter from Wireless Internet Service Providers Association, Google LLC, and Microsoft Corp. to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122 (filed July 15, 2019), Attachment (Reed Engineering Study).

1. The Reed Engineering Study, using conservative estimates and standard-based assumptions, demonstrates that through the combination of geographic exclusion zones around the FSS earth stations, station coordination, and P2MP system design parameters, the minimum separation distance required to protect FSS earth station receivers from receiving harmful interference from a co-channel P2MP transmitter is, on average, less than 10 kilometers.[10]

   The ability of P2MP systems and FSS earth stations to share C-band spectrum through this proposed mechanism is independent of the amount of spectrum the Commission makes available for P2MP operations in any repacking process. The greatest opportunity for P2MP systems to share C-band spectrum will be in rural areas where there are fewer and more widely dispersed satellite earth stations. The DSA concurs with the Commenters' assessment that more than 80 million Americans, mostly residing in less densely populated areas, will be able to access this highly underutilized spectrum in the near term for new P2MP gigabit broadband service.[11] If Reed Engineering used less conservative assumptions,[12] or if the Commission eliminated "full-band, full-arc" registrations, an even greater number of Americans could benefit.[13]

2. Based on the ACA Connects Coalition's $9 to 11 billion projected reimbursement cost to C-band stakeholders (e.g., FSS operators, programmers, non-Multichannel Video Programming Distributors (MVPD) C-band users, and MVPD earth station users),[14] and using the conservative valuation of the

[10] *See* Reed Engineering Study at Slide 42. "*Exclusion zones of about 10 km are sufficient to protect most fixed satellite service (FSS) earth stations from harmful interference caused by properly-engineered co-channel point-to-multipoint (P2MP broadband systems…Note: the 10 km exclusion zone is a statistical average and is intended for the baseline performance and estimating national coverage. In practice, this would be a site-specific number determined by coordination and suitable RF planning and design.*"

[11] *See* Comments of WISPA, Microsoft, and Google, at 2.

[12] *See* Reed Engineering Study at 40.

[13] *See* Reed Engineering Study footnote 3, at 2.

[14] *See* ACA Connects Coalition Proposal, Cartesian Study at 12.

repurposed spectrum at $0.25 to $0.30 / MHz / PoP (for 325 million population),[15]the Commission can repurpose 200 MHz for flexible use and authorize P2MP fixed wireless sharing with the remaining C-band FSS downlinks, and still generate substantial revenue for the Treasury Department and the American taxpayer.[16]

3. In general, DSA agrees with AT&T that the Commission "…should consider a more balanced approach to FSS growth than universal full-arc coordination and overly conservative protection zones." The DSA notes that AT&T is requesting the Commission look into FSS spectrum needs and operational requirements, more appropriate user device out-of-band-emissions limits, and less restrictive alternatives for protection of FSS C-band operations, among other things.[17] We interpret this requests to mean that AT&T believes the C-Band Alliance's proposal to protect incumbent operations amounts to unnecessary overprotection that would limit the ability of mobile operators to utilize portions of the repurposed spectrum. While not commenting on the relative merits of its requests, DSA notes that as an incumbent operator in the 6 GHz band, AT&T has taken a very similar hard line regarding what it considers to be its spectrum needs, operational requirements, and interference protection.[18]

[15] *See* ACA Connects Coalition Proposal, Cartesian Study at 14.

[16] Assuming a very conservative $0.25 / MHz / POP, the auction would raise over $16 billion. After subtracting the $11 billion high-end estimate of costs to be reimbursement required, leave the Treasury with a $5 billion profit.

[17] See AT&T May 23 Ex Parte at 2.

[18] See *Unlicensed Use of the 6 GHz Band*, ET Docket No. 18-295; *Expanding Flexible Use in Mid-Band Spectrum between 3.7 and 24 GHz*, GN Docket No. 17-183, Comments of AT&T Services, Inc., (February 15, 2019).

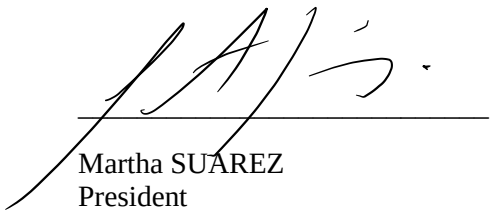
CONCLUSION

The DSA believes that the additional record created under this Public Notice will allow the Commission to put in place a flexible framework that will permit part of the C-band to be repurposed for mobile operations, while allowing for fixed P2MP systems to share spectrum with FSS earth stations in the repacked portion of the band, and opportunistically in areas where the flexible licensees choose not to roll out service.

The Reed Engineering Study demonstrates that with the proper design and coordination, P2MP fixed wireless access systems, on average, can operate within 10 km of an earth station, opening up the possibility of gigabit broadband access to 80 million largely unserved and underserved Americans.

Furthermore, P2MP deployments can happen almost immediately upon the Commission's adoption of permissive rules, as fixed operators already operate in the adjacent CBRS band, manufacturers have created an equipment ecosystem in that band, and robust dynamic sharing methods already exists. If speed, 5G leadership and eliminating rural / urban digital divide are truly among the Commission's chief goals in this proceeding, allowing P2MP sharing is an easy win on these counts while still protecting the incumbents from receiving harmful interference.

Respectfully submitted,



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