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Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Part 90 of the Commission's Rules	)	WP Docket No. 07-100
	)	
	)	

COMMENTS OF THE DYNAMIC SPECTRUM ALLIANCE

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President

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November 29, 2021

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The Dynamic Spectrum Alliance ("DSA")[1] submits these comments in response to the Federal Communications Commission ("FCC" or "Commission") Eighth Further Notice of Proposed Rulemaking ("Eighth FNPRM") in the above-captioned proceeding that explores ways in which the 4940-4990 MHz band ("4.9 GHz band") can be opened to more users and maximize the band's potential.[2] The Commission seeks comment on alternatives to stimulate expanded use of and investment in the band while also ensuring that public safety communications continue to have priority. DSA supports the Commission's efforts to "spur innovation, improve coordination, and drive down costs in the band."[3] Furthermore, we support the Commission's goals of leveraging technological advancements, fostering a robust equipment market, and addressing non-public safety use of the band.[4] To achieve these goals, DSA encourages the Commission to adopt a dynamic spectrum sharing model, similar to what is used in the Citizens Broadband Radio Service ("CBRS"), to allow public safety operations to continue on a protected basis, while opening the band for a wide range of new users and reducing equipment costs for all users.

Since allocating the 4.9 GHz band for public safety use in 2002, the Commission has tried a number of approaches to encourage greater use and investment in the band. Despite these

[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 the DSA members is available on the DSA's website at www.dynamicspectrumalliance.org/members/.

[2] *Amendment of Part 90 of the Commission's Rules*, WP Docket No. 07-100, Order on Reconsideration and 8th Further Notice of Proposed Rulemaking, FCC 21-106 (rel. Oct. 1, 2021) ("Eighth FNPRM"), at ¶ 27.

[3] *Id* at ¶27.

[4] *Id* at ¶4.

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efforts, a dearth of equipment and lack of widespread use by public safety agencies continues to render the band largely underutilized.[5] As the Commission lamented in the first paragraph of the *Sixth FNPRM*: "With no more than 3.5% of potential licensees using the band, we remain concerned that, as the Commission stated in 2012, the band has 'fallen short of its potential.'"[6] Public safety agencies bemoan the fact that limited use of the band has in turn resulted in a limited vendor ecosystem, a lack of specialized devices, and higher costs.[7] The limited ecosystem becomes more of an issue as the equipment currently deployed in the band approaches the end of its useful lifetime.

DSA strongly supports the Commission's twin goals of promoting more efficient and intensive use of the 4.9 GHz band for public safety communications, on a primary basis, and for commercial use on a secondary and opportunistic basis.[8] To achieve these goals, we recommend that the Commission implement a two- or three-tiered sharing approach where Tier 1 would consist of primary licensees in the band (including all incumbent users), while other non-public safety users could access the band on a secondary basis, much like CBRS General Authorized Access users do today. Use of a tiered sharing approach that leverages existing and proven

[5] *See. e.g.*, Memorandum Opinion and Order and Third Report and Order, *The 4.9 GHz Band Transferred from Federal Government Use*, WT Docket No. 00-32, 18 FCC Rcd. 9152 (2003); Report and Order and Further Notice of Proposed Rulemaking, *Amendment of Part 90 of the Commission's Rules*, WP Docket No. 07-100, 24 FCC Rcd 4298 (2009); Fourth Report and Order and Fifth Further Notice of Proposed Rulemaking, WP Docket No. 07-100, PS Docket No. 06-229, WT Docket No. 06-150, 27 FCC Rcd 6577 (2012) *("*Fifth FNPRM*")*.

[6] *Amendment of Part 90 of the Commission's Rules*, WP Docket No. 07-100, 6th Further Notice of Proposed Rulemaking, FCC 18-33 (rel. Mar. 23, 2018) ("Sixth FNPRM") at ¶ 1, quoting Fifth FNPRM, 27 FCC Rcd at ¶ 16.

[7] APCO International, "4.9 GHz Task Force Report," at 12 (Sept. 28, 2015) ("APCO Task Force Report"), https://ecfsapi.fcc.gov/file/60001325364.pdf.

[8] Eighth FNPRM at ¶ 4.

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automated database solutions, such as the Spectrum Access System ("SAS") or Automated Frequency Coordination ("AFC") system, will assist the Commission to achieve these goals. The type of automated shared access system will be dependent on whether the protection criteria adopted are based on aggregate interference, which could necessitate a more SAS-like approach, or on single entry, in which case a more AFC-like approach could suffice.

In prior comments, numerous parties expressed support for a tiered sharing framework for the 4.9 GHz band. For example, DSA member and CBRS SAS administrator, Federated Wireless, expressed its belief that a privately developed and operated dynamic spectrum sharing database "is the most efficient, most economical, and lowest risk option for the Commission because the model for such a system already exists and can be quickly, easily, and inexpensively adapted for this application, while fulfilling each of the Commission's stated goals for the band."[9] Federated Wireless further noted that compared to the alternatives, a dynamic spectrum database method would both simplify management of the band and promote efficient use:

> The dynamic spectrum database can assess band usage in real-time and assign channels to users for various use cases based on the types of communications they need (e.g., wide-area coverage, point-to-point or multipoint links, or even aeronautical or robotic usage). Such assignments can be made to protect incumbent public safety communications and other communications subject to any hierarchical rules the Commission may impose.[10]

[9] Comments of Federated Wireless, *Amendment of Part 90 of the Commission's Rules*, WP Docket No. 07-100, FCC 18-33, at 3 (July 6, 2018) ("Comments of Federated Wireless").

[10] *Id*. at 10.

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Similarly, in its response to the *Sixth FNPRM*, WISPA concurred with Federated Wireless, explaining that "a tiered sharing approach would achieve the Commission's goal of encouraging a more robust market for equipment and innovation," and that "the development of an equipment ecosystem would facilitate the introduction of new, lower-cost equipment and encourage innovation among competing equipment vendors and service providers, to the benefit of all users of the band, particularly public safety."[11] Furthermore, according to APCO, "sharing the band for commercial use has the potential to significantly increase equipment options" and "encourage equipment manufacturers to innovate and develop an expanded device ecosystem for the band."[12]

Real-time database coordination would also address one of the primary reasons the band is so lightly used, according to public safety agencies. Reports on the band by both the National Public Safety Telecommunications Council (2013) and by APCO International (2015) recommended a more formal process for frequency coordination, stating that many agencies were reluctant to deploy in the band because of the lack of information about what other agencies had deployed that might cause interference.[13] The APCO Task Force Report acknowledged that

[11] Reply Comments of Wireless Internet Service Providers Assn., *Amendment of Part 90 of the Commission's Rules*, WP Docket No. 07-100 (filed August 6, 2018), at 4.

[12] Comments of APCO International, *Amendment of Part 90 of the Commission's Rules*, WP Docket No. 07-100 led July 3, 2018), at 15-16. *See also* Federated Wireless Comments at 5-6 and 17.

[13] National Public Safety Telecommunications Council, "4.9 GHz National Plan Recommendations, Final Report" (Oct. 24, 2013) ("NPSTC 4.9 GHz Report"), http://www.npstc.org/download.jsp?tableId=37&column=217&id=3222&file=4_9_GHz_National_Plan_Report_131024.pdf; APCO International, "4.9 GHz Task Force Report" (Sept. 28, 2015) ("APCO Task Force Report"), https://ecfsapi.fcc.gov/file/60001325364.pdf.

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a coordination mechanism is critical, stating: "An innovative approach that incorporates essential features such as frequency coordination, with newer spectrum management tools that could expand the user base while preserving reliable access for public safety, may be the most appropriate path for fully unleashing all of the potential of the 4.9 GHz band."[14] APCO added that to further both public safety and more intensive use of the band, the Commission should encourage the development of a new coordination mechanism in collaboration with the vendor community, including the potential development of software to determine priority and preemption.[15]

A coordination mechanism similar to the SAS or AFC could provide a feasible means of coordinating among both primary and secondary users nationwide. Moreover, a tiered sharing approach, like what has operated successfully for over two years in the CBRS band, would achieve the twin goals the Commission has identified. Federated Wireless proposed a three-tier framework, similar to CBRS, based on the assumption that the Commission would want to give critical infrastructure users (e.g., electric power utilities) secondary but priority access, while simultaneously facilitating more general use of the band by authorizing database coordination of General Authorized Access to the remaining vacant spectrum.[16] The DSA agrees that from a practical standpoint, dynamic spectrum sharing in the 4.9 GHz band would be functionally similar to the CBRS band and would result in a win-win for all parties.

[14] *APCO Task Force Report* at 15.

[15] *Ibid.*

[16] Comments of Federated Wireless at 13-16.

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Conclusion

The DSA strongly supports the Commission's twin goals of promoting more efficient and intensive use of the 4.9 GHz band for public safety communications, on a primary basis, and for commercial use on a secondary and opportunistic basis. We recommend that the Commission leverage the extensive work and experience to date in implementing shared spectrum frameworks for other bands, such as CBRS or 6 GHz, and that it consider adopting a tiered sharing framework for the 4.9 GHz band that offers incumbent users with primary, protected status, and opens the remainder of the spectrum for opportunistic use.

Respectfully submitted,

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