

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

In the Matter of)	
)	
Expanding Flexible Use of the 12.2-12.7 GHz Band)	WT Docket No. 20-443
)	
Expanding Use of the 12.7-13.25 GHz Band for Mobile Broadband or Other Expanded Use)	GN Docket No. 22-352
)	

COMMENTS OF THE DYNAMIC SPECTRUM ALLIANCE

The Dynamic Spectrum Alliance (“DSA”)¹ hereby submits these comments in response to the Federal Communications Commission’s (“FCC” or “the Commission”) Further Notice of Proposed Rulemaking and Notice of Proposed Rulemaking (“FNPRM”) in the above captioned proceedings, in which it seeks comments on how to expand use of the 12.2-12.7 GHz (12.2 GHz) and 12.7-13.25 GHz (12.7 GHz) bands, while also ensuring current and future satellite services

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/.

in the 12.2 GHz band are “preserved and protected,”² exploring how to repack certain 12.7 GHz band incumbents, and also identifying methods for sharing between new fixed and mobile services and existing 12.7 GHz band satellite incumbents.

One of DSA’s primary goals is to increase spectrum access through shared and more efficient use. Achievement of this goal is possible through the introduction of dynamic shared access – either using an automated Dynamic Spectrum Management System (“DSMS”) that actively manages new entrants’ access to maximize use of spectrum while ensuring protection of incumbents, or through a carefully crafted set of rules that allow new unlicensed or licensed-by-rule operations under specific circumstances and operating parameters. Such dynamic shared access approaches can help achieve the Commission’s goals of connecting everyone, stimulating innovation for next-generation broadband, and accelerating an inclusive digital economy. As the Commission looks to solve challenges of underserved communities, dynamic shared access can enable higher-capacity and lower-cost deployments in both urban and rural underserved areas.

In the FNPRM, the Commission articulates its goals of “promoting technological innovation, and bolstering the growth of the nation’s economy” and developing “a pipeline of mid-band spectrum for mobile broadband or other expanded uses essential for connecting everyone, everywhere.”³ The DSA believes dynamic sharing mechanisms exist for both the 12.2 and 12.7 GHz bands to assist the Commission in achieving these objectives.

² *Expanding Flexible Use of 12.2-12.7 GHz Band*, Report and Order and Further Notice of Proposed Rulemaking and Notice of Proposed Rulemaking and Order, 88 FR 43502, at ¶ 1 (2023). (“FNPRM”).

³ *Id.*

The DSA's members have extensive experience in the development and implementation of automated dynamic spectrum sharing solutions, including in the TV White Spaces, 3.5 GHz Citizens Broadband Radio Service (CBRS), and 6 GHz bands, that can be tailored to meet the specific challenges of both the 12.2 GHz and 12.7 GHz bands. At its core, an automated dynamic spectrum sharing system is a software-based embodiment of the Commission's rules for protecting incumbents in a given frequency band, while enabling broader access. Automated dynamic spectrum sharing lowers transaction costs, uses spectrum more efficiently, speeds time-to-market for new services, protects incumbents from interference with greater certainty, and generally expands the supply of wireless connectivity that is fast becoming, like electricity, a critical input for other industries and economic activity. Increasing spectrum access by a wide range of new users leads to more rapid deployment of new networks, services, and innovative business models. The DSA believes that the introduction of new licensing options supported by automated dynamic spectrum sharing technology is the best path to support such deployments.

Moreover, the experience the Commission and industry have gained from implementing automated dynamic shared spectrum solutions should be instructive to this proceeding. For example, sharing between terrestrial CBRS operations in the 3.5 GHz band under the Commission's Part 96 rules is particularly relevant to potential sharing in the 12.2 and 12.7 GHz bands. In the three-and-a-half years of commercial CBRS service, during which time over 350,000 CBRS devices (CBSDs) have been deployed, there have been no reports of interference from protected incumbents, including the U.S. Department of Defense and fixed satellite service (FSS) earth stations.

While some of the incumbent uses of the 12.2 and 12.7 GHz bands are different than those in the TV White Spaces, CBRS or 6 GHz bands, the technical challenges of establishing protection criteria and methodologies that can be implemented by automated dynamic spectrum management solutions are not insurmountable. In fact, history has already shown that adapting existing sharing solutions to new bands and incumbent uses through industry-led discussions and cooperation can be accomplished readily. With knowledge of the location and operating parameters of incumbent operations, an automated dynamic spectrum management system can be designed and implemented to facilitate additional access to both the 12.2 GHz and 12.7 GHz band frequencies. While there are significantly more satellite receivers operating in the 12.2 GHz band than in the 3.5 GHz band, today's automated sharing systems are fully scalable and designed to handle the computational requirements necessary to protect large numbers of incumbent receivers. Furthermore, while 12.2 GHz band satellite receiver location information may be less precise than what is available for CBRS, automated sharing systems are also capable of accounting for location uncertainty in their calculations. Similarly, in the 12.7 GHz band, sharing between new terrestrial fixed and mobile services and FSS incumbents can be achieved by leveraging automated dynamic spectrum management tools.

The FNPRM requests comments on potential licensing approaches to expand use of both bands. The DSA has identified two different approaches that will lead to more intensive and efficient use while increasing spectrum access by a wide range of new users: 1) a use-or-share approach that authorizes secondary and coordinated access for fixed point-to-point and point-to-multipoint broadband deployments where existing licensees are not using the spectrum; and 2)

an underlay that is either unlicensed or licensed-by-rule contingent on the protection of incumbent operations, similar to unlicensed operations in the 6 GHz band or the General Authorized Access (GAA) tier in CBRS.

The use-it-or-share-it approach can expand access to unused spectrum by smaller and non-traditional Internet Service Providers (ISPs) in rural and underserved areas, as well as provide for enterprise and institutional use. Should the Commission modify current MVDDS licenses to allow for flexible use, these more valuable rights can be conditioned with an obligation to accommodate opportunistic use. Until the spectrum is actually put into service in a local area, it should be available for non-interfering use by networks and devices that are multi-band and required to regularly renew permission to transmit by checking a geolocation database. Primary licensees lose no rights whatsoever and bear a de minimus burden to simply inform the certified database coordinator prior to commencing service in a particular local area, so that any opportunistic users will be immediately denied permission to operate on that frequency band. Opportunistic access to locally vacant spectrum in the 12.2 and 12.7 GHz bands could be managed in much the same way that the CBRS rules authorize GAA to unused Priority Access Licenses (PAL) spectrum.

This use-it-or-share-it approach is also consistent with the Commission's successful authorization of coordinated access to unused spectrum in the lower 45 megahertz of the 5.9 GHz band by wireless internet service providers ("WISPs").⁴ In response to increased demand

⁴ See FCC Press Release, "5.9 GHz Band Boosts Consumer Internet Access During Covid-19 Pandemic," May 4, 2020. Available at: <https://docs.fcc.gov/public/attachments/DOC-364138A1.pdf>.

for broadband associated with the COVID pandemic, the Commission authorized at least 100 WISPs to make coordinated, secondary use of the spectrum to boost the capacity of their fixed wireless deployments in mostly rural, small town and historically underserved areas.⁵

The Commission also might consider a terrestrial underlay in the 12.2 and 12.7 GHz bands that is either unlicensed or licensed-by-rule contingent on the protection of incumbent satellite operations. All new terrestrial services would be granted the same rights, and access would be managed by an automated spectrum management system to ensure incumbent protection and facilitate co-existence amongst new terrestrial users – similar to unlicensed operations in 6 GHz and/or GAA use of CBRS.

I. CONCLUSION

The DSA appreciates the opportunity to comment on the Commission’s FNPRM on the expanded use of the 12.2 GHz and 12.7 GHz bands. The DSA and its members have extensive experience in developing sharing frameworks that may be applicable to these bands, including the use of an automated database shared access system or a carefully crafted set of rules that allow new unlicensed or licensed-by-rule operations under specific circumstance and operating parameters. We look forward to working with the Commission and industry to develop detailed

⁵ Claude Aiken, “FCC 5.9 GHz STA Helps WISPs Serve Through COVID-19 Pandemic,” Claude’s Blog, Wireless Internet Service Providers Association (WISPA), available at http://wispa.org/news_manager.php?page=21979.

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technical proposals to maximize the use of this important 1050 MHz of spectrum while simultaneously ensuring incumbent protections and rights.

Respectfully submitted,

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