Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band	)))	GN Docket No. 12-354

COMMENTS OF WI-FI ALLIANCE

Wi-Fi Alliance submits these comments in the above-referenced proceeding in which the Commission seeks further input on several issues to "optimize" its recently established rules for the Citizens Broadband Radio Service ("CBRS") in the 3.5 GHz band.[1/] As Wi-Fi Alliance has previously explained in the proceeding, there is a well-documented, growing need for unlicensed spectrum capacity, and the 3.5 GHz band can help satisfy those requirements.[2/] In considering how to define "use" of Priority Access License ("PAL") frequencies, the Commission should therefore continue to promote maximum opportunistic access of the 3.5 GHz band by General Authorized Access ("GAA") devices. The Commission should likewise not apply its secondary market rules, which are contrary to the premise of the 3.5 GHz band's shared-use architecture, to PALs in the band. Nor should the Commission over-protect satellite licensees in or around the 3.5 GHz band. Adopting restrictions and exclusion zones beyond what is necessary would compromise the Commission's efforts to create additional capacity for unlicensed operations.

I. BACKGROUND AND INTRODUCTION

Wi-Fi Alliance is a global, non-profit industry association of more than 600 leading companies from dozens of countries, including 213 from the United States, who are devoted to a vision of "connecting everyone and everything, everywhere." With technology development, market building, and regulatory programs, Wi-Fi Alliance has enabled widespread adoption of Wi-Fi worldwide, certifying

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1/ *See Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550- 3650 MHz Band*, Report and Order and Second Further Notice of Proposed Rulemaking, 30 FCC Rcd. 3959 (2015) ("Report and Order" or "Second FNPRM," as appropriate).

2/ *See* Comments of Wi-Fi Alliance, GN Docket No. 12-354, at 1 (filed July 14, 2014).

thousands of Wi-Fi products each year. The Wi-Fi Alliance mission is to provide a highly effective collaboration forum for stakeholders, deliver excellent connectivity experiences through interoperability, embrace technology innovation, promote the adoption of Wi-Fi technologies worldwide, advocate for fair worldwide spectrum rules, and to lead, develop, and embrace industry-agreed standards.

Wi-Fi Alliance appreciates the Commission's efforts to create additional capacity for unlicensed operations in the 3.5 GHz band, and applauds the recent adoption of the 3.5 GHz Report and Order.[3/] In the Order, the Commission adopted a novel hybrid framework for the 3.5 GHz band that automatically coordinates spectrum use based on local supply and demand.[4/] In so doing, the Commission struck an appropriate balance between maximizing the availability of the 3.5 GHz band for GAA operations and permitting use of the band by PALs.[5/] This approach will "facilitate[] evolution of the band and an ever-changing mix of GAA and Priority Access bandwidth over time."[6/]

As the Commission explores additional issues regarding the new CBRS, it should continue to promote opportunistic use of the 3.5 GHz band by GAA devices. Specifically, the Commission's understanding of the "use" of PAL spectrum should center on the transmission or reception of radiofrequency energy. The Commission must also recognize that adopting any form of secondary market rules for the transfer of PALs would be contrary to the shared-use concept that characterizes the 3.5 GHz band. Finally, the Commission should provide the correct amount of protection for – and not over-protect – satellite licensees in or around the band.

3/ *See generally* Report and Order.

4/ *See id.* ¶ 5.

5/ *See id.* ¶¶ 5, 8.

6/ *See id.* ¶ 5.

II. COMMENTS

A. "Use" of PAL Spectrum Should Be Based on Transmission or Reception of Radiofrequency Energy

Wi-Fi Alliance supports employing an engineering-based approach for allowing opportunistic access to unused PAL channels.[7/] Such an approach would "maximiz[e] the flexibility and utility of the 3.5 GHz band for the widest range of potential users"[8/] by permitting access based on information provided to the Spectrum Access System ("SAS") by PALs regarding current use of transmitters or receivers employing the applicable channel assignments. Unless there is a current report that radiofrequency ("RF") energy is being actively transmitted or received on PAL channels, those channels should be available for GAA use. The SAS should be permitted to terminate GAA use of a PAL channel upon notice from the PAL, in which case the SAS would then re-assign the GAA user to another channel. This engineering-based model is both easy to understand and fair to those sharing the 3.5 GHz band.

PALs should not be permitted to defeat potential GAA use by reserving channels for guard bands in which there are no active transmissions or reception.[9/] To do so would unnecessarily limit the opportunistic use of PAL spectrum by GAA users. *First*, the Commission has created technical rules that assume no such guard band is necessary.[10/] *Second*, if PALs believe they require protection additional to what the Commission has already found appropriate, they should use guard bands internal to their 10 megahertz channel blocks. Adding yet another layer of protection to PALs in the form of unnecessary guard bands would undermine what the Commission has already concluded regarding the level of protection necessary.

7/ *See* Second FNPRM ¶¶ 419-424, *citing* Letter from Austin C. Schlick, Director, Communications Law, Google, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 12-354, at 3 (filed Jan. 20, 2015); Comments of Pierre de Vries, GN Docket No. 12-354, at 22 (filed July 14, 2014).

8/ *See* Second FNPRM ¶ 419.

9/ *See id.* ¶ 422.

10/ *See generally* Report and Order ¶¶ 176-222.

Finally, the Commission's suggested alternative approach of using an economic definition of "use" is unnecessarily complicated and does not adhere to the Commission's goal of sharing spectrum.[11/] By "view[ing] the PAL as an option to exclude GAA usage" and providing "PAL licensees . . . the right to exclude GAA access,"[12/] the Commission would not be fostering the sharing envisioned by the President's Council of Advisors on Science and Technology ("PCAST") in its July 2012 recommendation.[13/]

B. The Secondary Market Rules Should Not Apply to PAL Use

Because a primary purpose of the Commission's new regulatory framework for the 3.5 GHz band is to foster shared use between PAL and GAA use,[14/] allowing licensees to divert potential GAA use to lessees through secondary markets is contrary to the public interest.[15/] Intended to promote limited spectrum rights, the PAL rules specify short license terms, non-renewal of the licenses, and other characteristics to meet specific – not general – licensee needs. It would be contrary to those goals for PALs to allow others to use the spectrum except through the SAS process. The secondary market rules promote use of spectrum when the licensee is not employing its authorized frequencies. However, in the 3.5 GHz band, the SAS performs precisely that role, taking the place of secondary market rules while eliminating both transaction costs and time. As the Commission has explained at length, the SAS will "serve[] as an advanced, highly automated frequency coordinator across the band. It protects higher tier users . . . and optimizes frequency use to allow maximum capacity and coexistence for both GAA and

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11/ *See* Second FNPRM ¶¶ 425-429.

12/ *See id.* ¶ 425, *citing* Reply Comments of William Lehr, Massachusetts Institute of Technology, GN Docket No. 12-354, at 1 (filed Aug. 1, 2014).

13/ *See* Report and Order ¶ 13, *citing* Executive Office of the President, President's Council of Advisors on Science and Technology, *Report to the President: Realizing the Full Potential of Government-Held Spectrum to Spur Economic Growth* (July 2012), available at https://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast_spectrum_report_final_july_20_201 2.pdf.

14/ *See* Report and Order ¶¶ 2-4.

15/ *See* Second FNPRM ¶¶ 431-435.

Priority Access users."[16/] Accordingly, secondary market rules for 3.5 GHz PAL holders would be redundant.

C. The Commission Should Not Over-Protect FSS Operations

As an initial matter, the Commission should clarify exactly which fixed satellite service ("FSS") earth stations are to be protected under the CBSD rules.[17/] There are discrepancies between different sources of Commission information. Specifically, when the Commission adopted service rules in 2005 making the 3650-3700 MHz band available for terrestrial operations, it provided a list of protected FSS stations and a link to that list remains on the Commission's website. [18/] However, the list of protected earth stations below 3700 MHz referenced in the Report and Order[19/] includes FSS stations (*e.g.*, certain earth stations in Connecticut and Long Island) that were not grandfathered in 2005 – and should not be grandfathered after-the-fact.

Wi-Fi Alliance supports the Commission's conclusions, drawing on the National Telecommunications and Information Administration ("NTIA")'s recommendations, that exclusion zones were too large and unnecessarily uniform.[20/] The Commission's rules should similarly provide only those protections realistically required for FSS operations. The level of protection needed for FSS stations will depend on, among other things, terrain characteristics and the operational parameters of the FSS station and the potentially impactful 3.5 GHz station. SASs should be permitted to calculate exclusion zones based on those operational parameters. Such an approach would be consistent with the SAS's

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[16/] Report and Order ¶ 5.

[17/] *See id.* ¶¶ 276-296.

[18/] *See Wireless Operations in the 3650-3700 MHz Band; Rules for Wireless Broadband Services in the 3650-3700 MHz Band; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band; Amendment of the Commission's Rules with Regard to the 3650-3700 MHz Government Transfer Band*, Report and Order and Memorandum Opinion and Order, 20 FCC Rcd. 6502 at Appendix E (2005). *See also* FCC, *3650 MHz Grandfathered Earth Stations* (May 14, 2015), *available at* http://transition.fcc.gov/ib/sd/3650/.

[19/] *See* Report and Order at Appendix A, § 96.17, *citing* FCC, *3.5 GHz Band – Protected Fixed Satellite Service (FSS) Earth Stations* (Apr. 22, 2015), *available at* https://www.fcc.gov/cbrs-protected-fss-sites.

[20/] *See* Report and Order ¶¶ 258-262.

general functions – optimizing frequency use to unlock the 3.5 GHz band's maximum potential. Finally, the rules may unnecessarily limit 3.5 GHz band use by requiring the protection of non-existent earth stations in the 3700-4200 MHz band. Wi-Fi Alliance expects that many of these C Band earth station licensees neglect to affirmatively notify the Commission when their operations cease and their authorizations should be terminated. This practice results in many more earth station authorizations than there are stations that require protection. The Commission should therefore review the C-band licensed earth station database to ascertain which are still in existence.

III. CONCLUSIONS

Wi-Fi Alliance applauds the Commission for opening up the 3.5 GHz band for a variety of shared uses, and for considering further proposals in an effort to maximize the band's potential. Because of the ever-increasing need for more spectrum for unlicensed operations, it is critical that rules promote the use of GAA devices to the maximum extent feasible, without unnecessarily limiting access to PAL spectrum or protecting satellite users.

Respectfully submitted,

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