

**Before the
Federal Communications Commission
Washington, DC 20554**

In the Matter of)	
)	
Promoting Investment in the 3550 – 3700 MHz Band)	GN Docket No. 17-258
)	

To: The Commission

COMMENTS OF MICROSOFT CORPORATION

Microsoft Corporation (“Microsoft”) hereby submits its Comments in response to the above-captioned Notice of Proposed Rulemaking (“NPRM”) regarding the Citizens Broadband Radio Service (“CBRS”).¹ In the NPRM, the Commission “seek[s] comment on several proposed changes to the rules governing Priority Access Licenses (“PALs”) that will be issued in the 3550 – 3700 MHz band (“3.5 GHz Band”)”....² Microsoft fully supports the Commission’s goal “to promote robust network deployments in both urban and rural communities” using the 3.5 GHz *Band*.³ Microsoft does not, however, support most of the changes to the current rules proposed by the Commission because such changes would not promote the “robust investment in network deployment” that the Commission seeks and that the public deserves.⁴

¹ *Promoting Investment in the 3550 – 3700 MHz Band*, Notice of Proposed Rulemaking and Order Terminating Petitions, GN Docket No. 17-258, FCC 17-134 (Oct. 24, 2017).

² *Id.* at ¶ 1.

³ *Id.* at ¶ 2.

⁴ *Id.* at ¶ 1.

Although beyond the scope of this NPRM, Microsoft continues to believe that the Commission should extend the upper boundary of the CBRS band to include 3700 to 3800 MHz, as we proposed in our comments in the Mid-Band Spectrum NOI.⁵ Increasing the size of the CBRS band from 150 to 250 megahertz under the current CBRS rules would provide CBRS operators greater opportunities to access and innovate in this valuable spectrum, and thus, it will serve the public interest.

I. The Commission Should Not Adopt a 10-Year License Term for PALs

A. Background

The current rules provide for a three-year license term with no renewal expectancy.⁶ During the first application window, however, an applicant may apply for up to two consecutive license terms – in essence, an applicant can apply for an initial license term of six years.⁷

The Commission proposes to revise its rules by increasing the license term from three years to ten years, and by eliminating the automatic termination at the end of the license term.⁸ The Commission asks about the impact of its proposal on future investment, and specifically seeks comment on “how a longer, renewable license term for PALs could affect deployment in rural areas.”⁹

⁵ Comments of Microsoft Corporation (filed October 2, 2017) at 5 – 6, filed in response to *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, Notice of Inquiry, GN Docket No. 17-183, FCC 17-104, rel. Aug. 3, 2017 (“Mid-Band Spectrum NOI”).

⁶ 47 C.F.R. § 96.25(b)(3).

⁷ 47 C.F.R. § 96.27(b).

⁸ NPRM at ¶ 13.

⁹ Id. at ¶¶ 14, 15.

B. A Six-Year License Term Will Maximize Deployment and Competition in the 3.5 GHz Band

Microsoft urges the Commission to adopt a license term of six years (equivalent to the two three-year terms available under the current rules to initial applicants) with no renewal expectancy. A ten-year license term is far too long. It will impair broad investment in the 3.5 GHz Band, particularly in less densely populated areas, by unduly raising the price for licenses at auction. Additionally, in more densely populated areas, the ten-year term combined with the aggregation of up to four PALs and a renewal expectancy, will limit competition for PALs by entities that require interference protection to provide their service, in what is now considered an early 5G mobile band. Six years is more than enough time for a winning bidder to deploy services and earn a return on its investment. It is important to note that when the PAL terminates, the current license holder can bid for the same PAL(s) or choose to operate under General Authorized Access (“GAA”). In fact, if the business case warrants it, existing PAL holders will be highly motivated bidders for the new PALs in that geographic licensing area.

Microsoft believes that the Commission’s proposal to extend the license term to ten years with a renewal expectancy is contrary to the intent of the statutory objectives of Section 309(j). These objectives include “promoting economic opportunity and competition” and “ensuring that new and innovative technologies are readily accessible by avoiding excessive concentration of licenses and by disseminating licenses among a wide variety of applicants, including small businesses [and] rural telephone companies.”¹⁰ These objectives also include

¹⁰ 47 U.S.C. § 309(j)(3)(B).

“recovery for the public of a portion of the value of the public spectrum” and “efficient and intensive use of electromagnetic spectrum.”¹¹

In setting the license term, the Commission must seek to maximize the availability of the spectrum for a wide variety of potential operators and use cases, rather than adopt rules that would favor the limited business models of the nationwide mobile carriers. These expanded use cases extend well beyond the deployment of 5G mobile services in densely populated urban areas and include mobile and fixed deployments in suburban, exurban and rural areas. Increasing the license term to ten years will greatly increase the price at auction of PAL licenses (even more so if geographic areas larger than census tracts are adopted), and thereby limit the opportunities for smaller entities to successfully bid on the spectrum. Further, it is these smaller entities who are most interested in deploying in non-urban areas. Stated differently, ten-year license terms will greatly increase the cost of spectrum and thereby decrease service to the less densely populated areas that have the greatest need for improved broadband.

II. Census Tracts Should Be Retained as the Geographic Licensing Area

The rules governing the geographic license area will have the greatest impact on whether the Commission succeeds, or fails, to promote investment in, and robust deployment on, the 3.5 GHz Band across multiple use cases and population densities. The current rules wisely define the geographic license area for each PAL as one census tract.¹² In adopting census tracts, the Commission recognized the importance of increased flexibility, efficiency and

¹¹ 47 U.S.C. § 309(j)(3)(C) and (D).

¹² 47 C.F.R. § 96.3 (definition of “License area”).

targeted deployment.¹³ The proposal to increase the size of the geographic license area would undermine the Commission’s goals and the public interest. Further, there have been no changes in the technology or the market in the 2.5 years since the CBRS rules were adopted that warrant an increase in the defined license area.

Huge geographic areas, like Partial Economic Areas (“PEAs”), would be a terrible mismatch for the anticipated small-cell deployments in the 3.5 GHz Band. Licensing by large geographic areas would require entities to bid on areas *much* larger than many entities are interested in serving. These entities, particularly smaller entities seeking to serve exurban and rural areas, or to serve self-contained venues such as corporate and college campuses, manufacturing facilities, and fair grounds, would be unable to compete with large national mobile carriers at auction. Further, large amounts of spectrum in less densely populated areas within larger geographic areas will, at worst, go unused, and at best, be relegated to unprotected General Authorized Access (“GAA”) status. For the reasons explained in Section III below, Microsoft does not believe that spectrum disaggregation and/or partitioning would provide a real-world solution to this mismatch of service areas and license areas.

The best solution is to retain the current rule defining the geographic area of a PAL license as a census tract. Census tracts align more closely to the likely service area of CBRS operators than do counties or PEAs. Because census tracts nest into counties, and counties nest into PEAs, an operator interested in serving a larger area can do so by bidding on multiple census tracts. Further, competition for densely populated census tracts would be fierce,

¹³ 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, GN Docket No. 12-354, 30 FCC Rcd 3959 (2015) (“*CBRS Order*”) at ¶¶ 96 – 101.

maximizing auction revenue. At the same time, there would be separate bidding for less densely populated census tracts, placing value (an appropriate value) on these geographic areas while not freezing out smaller entities from successfully bidding on spectrum that matches their desired service area.

Smaller license areas will, of course, result in more borders, but will not impose an undue burden for licensees. As Google noted, census tracts do not create interference protection problems because the SAS does not protect census tract boundaries, but rather protects actual CBSD deployments.¹⁴ Further, the auction and operation, via the SAS, of up to seven PALs in 74,000 census tracts will not create undue uncertainty. Small applicants will be focused on one or a handful of census tracts. Large applicants will have the resources to bid on thousands or tens of thousands of census tracts. Modern databases can easily keep track of tens of thousands of licenses, so neither the Commission nor the SAS administrators should be overwhelmed by the auction of census tract licenses. As WISPA pointed out, the fact that “more than 10 parties have submitted applications to be SAS administrators *under existing census tract licensing rules* should provide ample evidence” that concerns about complexity are unfounded.¹⁵

¹⁴ Comments of Google Inc. and Alphabet Access, filed July 24, 2017, in response to Petitions for Rulemaking Regarding the Citizens Broadband Radio Service, GN Docket No. 12-354, RM-11788 and RM-11789 (“Google Comments”) at 25.

¹⁵ Comments of the Wireless Internet Service Providers Association (“WISPA”), filed July 24, 2017, in response to the Petitions for Rulemaking Regarding the Citizens Broadband Radio Service, GN Docket No. 12-354, RM-11788, and RM-11789, at 22 (emphasis in original).

III. Partitioning and Disaggregation Should be Prohibited

Microsoft opposes the Commission's proposal to reverse the current prohibition and allow partitioning and disaggregation of PALs in secondary market transactions.¹⁶ In theory, partitioning and disaggregation could, on an after-the-fact basis, help to align geographic service areas with the actual service areas that different operators may seek to serve.

Partitioning and disaggregation are an incredibly inefficient means to achieve the desired alignment of license areas with small-cell service areas in the 3.5 GHz band. It is no surprise then that partitioning and disaggregation have largely failed in the real world, because the transaction costs to acquire access to spectrum in small geographic areas in less densely populated areas are higher than the value of the spectrum to be leased or sold.¹⁷ Microsoft submits that if nationwide mobile operators win large geographic area licenses, these operators will be largely unwilling to negotiate with fixed service operators seeking to provide coverage in discrete geographic areas. The bottom line is that partitioning and disaggregation will not actually make spectrum available in less densely populated areas, and these areas will remain unserved by interference-protected PAL licenses.

IV. The 40 MHz Spectrum Aggregation Limit For PALs Should be Retained

The Commission should retain the current 40 MHz spectrum aggregation limit for each licensed geographic area.¹⁸ With 70 MHz of spectrum available for PAL licenses, the 40 MHz limit ensures that at least two licensees will be able to obtain enough spectrum to compete

¹⁶ NPRM at ¶ 31.

¹⁷ See Google Comments at 21.

¹⁸ 47 C.F.R. § 96.31.

effectively with each other. The public interest would not be served by allowing one licensee to hold all 70 MHz of PAL spectrum, thereby relegating all other operators to less desirable, unlicensed GAA spectrum. Further, limiting the spectrum holdings of one licensee in a geographic area will mitigate the potential for large swaths of licensed spectrum to go unused during a license term.

V. PALs Should be Assigned Up to the Aggregation Limit Even if There is Only One Applicant

The Commission should assign PALs up to the 40 MHz aggregation limit even if there is only one applicant in a given license area. The Commission has already modified its rules to permit the assignment of PALs in certain rural areas where there is only one applicant,¹⁹ and now it should complete the process by permitting the assignment of PALs in all geographic areas even if there is only one applicant -- up to a total of four PALs per license holder. Importantly, however, no PAL should be assigned unless the bidder meets the reserve price established by the Commission. If the reserve price set by the Commission for a PAL is not met, the spectrum should be returned to the GAA pool.

VI. PAL Applicants Should Not be Permitted to Bid on Specific Channel Assignments

The Commission should maintain the current rule that PALs cannot bid on specific spectrum blocks.²⁰ The rules already provide that PALs may request a particular channel or

¹⁹ *Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550 – 3650 MHz Band, Order on Reconsideration and Second Report and Order*, GN Docket No. 12-354, 31 FCC Rcd 5011 (2016) at ¶ 55.

²⁰ 47 C.F.R. § 96.25(b)(2).

frequency range, and that the SAS must assign multiple channels held by a PAL to contiguous channels, to the extent feasible.²¹ These dynamic frequency assignment rules are carefully designed to achieve several goals. First, the rules minimize disruptions to service. The Commission found that:

[S]tatic channel assignments for Priority Access Licensees would lead to unpredictable spectrum availability, undermining the very stability that commenters claim is needed to encourage investment in the band. However, with automated frequency assignment, Priority Access Licensees could be relocated to unencumbered channels and allowed to continue providing service.²²

Second, the current rules prevent a licensee from positioning itself in the middle of a spectrum block, “thereby preventing other PAL holders from aggregating contiguous blocks.”²³ Finally, the rules maximize efficient use of the spectrum without adding unnecessary complexity to the bidding process.

VII. Conclusion

For the reasons set forth above, Microsoft urges the Commission to authorize a license term of six years without a renewal expectancy, maintain census tracts as the geographic license area and maintain the PAL aggregation limit of 40 MHz within the census tract. Additionally, Microsoft believes the Commission should not permit a PAL holder to partition or disaggregate its license, nor should it allow prospective PAL holders to bid on specific channels. Further, the Commission should assign PALs within a census tract even where there is only one

²¹ 47 C.F.R. §§ 96.25(b)(2) and (b)(2)(i).

²² CBRS Order at ¶ 81.

²³ Google Comments at 26.

applicant in a given license area, up to the four PAL aggregation limit, as long as the bid for each PAL meets the Commission-set reserve price. Finally, the Commission should expand the upper bound of the CBRS Band to 3800 MHz to provide CBRS operators with access to this spectrum.

Respectfully submitted,

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