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
	)	

COMMENTS OF UNITED STATES CELLULAR CORPORATION

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United States Cellular Corporation ("USCC") submits these comments in response to the Notice of Proposed Rulemaking released by Commission in the above-captioned proceeding on October 24, 2017.[1] For the reasons detailed herein, USCC generally supports the Commission's proposed changes to the rules governing the Priority Access Licenses ("PALs") that will be issued for the 3550-3700 MHz band (the "3.5 GHz band"), including ten-year license terms, PAL renewal rights, larger geographic license areas, and competitive bidding procedures that do not artificially restrict the number of available PALs. USCC also urges the Commission to prohibit the public disclosure of Citizens Broadband Radio Service Device ("CBSD") registration information.

I. INTRODUCTION & SUMMARY

Wireless service providers will require a sufficient quantity of low-, mid- and high-band spectrum in order to provide consumers with seamless and robust 4G and 5G services. Mid-band spectrum is unique in this mix as it offers greater capacity than generally available in low-band spectrum and has superior propagation characteristics as compared to high-band spectrum. The 3.5 GHz band, therefore, presents a crucial opportunity to advance 4G and 5G deployments,

[1] *See Promoting Investment in the 3550-3700 MHz Band*, Notice of Proposed Rulemaking and Order Terminating Petitions, 32 FCC Rcd 8071 (2017) ("*NPRM*").

especially given that it is the only mid-band spectrum that will be made available for mobile broadband operations in the near future. Accordingly, the Commission must ensure that the rules for the 3.5 GHz band facilitate investment in the Citizens Broadband Radio ("CBR") Service to the greatest extent possible.

USCC appreciates the Commission's efforts thus far with respect to authorizing commercial use of the 3.5 GHz band. USCC cautions, however, that the complexity and uncertainty inherent in some of the current rules governing PALs could have a devastating effect on the level of investment and innovation in the 3.5 GHz band. USCC therefore urges the Commission to revise the current PAL rules in several ways that largely align with the Commission's proposals, which USCC agrees are generally consistent with the licensing schemes "that helped foster the development of 4G and LTE services in the United States," and thus, "similarly will encourage robust investment" in the 3.5 GHz band.[2]

USCC notes that the proposed changes to the PAL rules have become even more necessary given that, since the Commission first adopted these rules, the industry's deployment plans for the 3.5 GHz band have shifted "from a novel small cell play to an important mid-band opportunity for 5G."[3] Accordingly, the Commission should not base any future decisions regarding the PAL licensing framework on the premise that this spectrum will be used primarily for small cells to augment 4G networks. Rather, as the Commission recognizes, in order to "maintain U.S. leadership in the global race for 5G," it must "ensure that the service rules governing bands that are critical for 5G network deployments – including the 3.5 GHz Band – keep up with technological advancements…"[4] Importantly, because the proposed rule revisions

[2] *Id.* at 8072.

[3] Comments of CTIA, GN Docket No. 12-354, pp. 3-4 (July 24, 2017).

[4] *NPRM*, 32 FCC Rcd at 8072.

will spur significant investment in the 3.5 GHz band, they will benefit *all* users of this spectrum, including General Authorized Access ("GAA") users, by facilitating a robust device ecosystem that will promote both innovative new products and economies of scale and scope.

As detailed below, authorizing PALs on the basis of census tracts will result in an unmanageable licensing scheme that will dissuade investment in the 3.5 GHz band. USCC therefore urges the Commission to instead authorize PALs on the basis of Partial Economic Areas ("PEAs"), which are large enough to mitigate the administrative burdens, auction complexity, and interference risks that would arise from census tract-level licensing, but also small enough to permit targeted service deployments.

In addition, the unnecessarily short three-year term for PALs and the inability to renew PALs for subsequent terms will make PALs far less attractive to potential licensees because of the very real risk that licensees' investments in the 3.5 GHz band will become stranded. USCC therefore supports the Commission's proposals to increase the PAL term to ten years and to provide licensees with a right of renewal.

Further, given that a variety of potential CBR Service providers require the quality of service guarantees that will only be available in the 3.5 GHz band via a PAL, USCC supports the Commission's proposal to repeal the mutual exclusivity requirement for PAL auction applications, and to instead permit the assignment of PALs in every license area, including in those license areas for which there is only one PAL applicant. Likewise, USCC supports the Commission's proposal to make available in each license area the number of PALs for which applicants have applied, up to a maximum of seven PALs. The current policy of making available one less PAL than the total number of PALs demanded by applicants in a license area

risks gradually phasing out PALs in some license areas despite a consistent level of future demand, and thereby, stranding the investments of the incumbent licensees in these areas.

Finally, USCC urges the Commission to prohibit the public disclosure of CBSD registration information in order to protect competitively sensitive data regarding CBR Service providers' deployments, as well as to address potentially harmful security risks.

II. PALs SHOULD BE AUTHORIZED ON THE BASIS OF PEAs, RATHER THAN CENSUS TRACTS

USCC urges the Commission to increase the geographic licensing area of PALs, and specifically to authorize PALs on the basis of PEAs rather than at the census tract level, which would involve 74,000 license areas and up to 518,000 PALs.[5] As USCC and other commenters previously detailed, such a large number of license areas and PALs will result in an unworkable licensing scheme that will greatly depress interest in the 3.5 GHz band.[6]

For instance, T-Mobile explained how, in addition to being "difficult for the SAS to administer and manage,"[7] a census tract-based licensing scheme will "impose unnecessary burdens on licensees and the Commission."[8] In addition to administrative burdens, auctions of census tract-based PALs will be exceedingly complex, and thus, burdensome. As T-Mobile explained, such auctions "will involve significant and unnecessary time and resources" because potential PAL licensees "will be required to evaluate each census tract – each of which vary in

[5] *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, 3991 (2015) ("*3.5 GHz Order*").

[6] *See* Comments of United States Cellular Corporation, GN Docket No. 12-354, pp. 3-5 (July 24, 2017); Reply Comments of United States Cellular Corporation, GN Docket No. 12-354, pp. 3-8 (August 8, 2017).

[7] Petition for Rulemaking, T-Mobile USA, Inc., GN Docket No. 12-354, p. 16 (June 19, 2017) ("T-Mobile Petition").

[8] Reply Comments of T-Mobile USA, Inc., GN Docket No. 12-354, p. 10 (August 8, 2017) ("T-Mobile Reply Comments"); *see* Petition for Rulemaking, CTIA, GN Docket No. 12-354, p. 9 (June 16, 2017) ("CTIA Petition") ("Census tract licensing [ ] will be unnecessarily challenging for SAS administration and for licensees themselves to manage.").

size – in order to determine which licenses best suit [their] business needs."[9] Census tract-level licensing also will give rise to potentially insurmountable interference risks because there will be "no effective way to manage the incredible number of buffer zones necessary to ensure interference-free operations between PALs."[10]

PEA-based licensing, on the other hand, would involve a far more manageable 416 license areas, and thus, would reduce "administrative burdens for the Commission, SAS Administrators, and licensees alike,"[11] as well as allow for far less complex PAL auctions.[12] Authorizing PALs on the basis of PEAs also would be consistent with the licensing framework the Commission adopted for both the low- and high-band spectrum that, along with the 3.5 GHz band, will be used to deploy 5G networks.[13] Specifically, "in both the 600 MHz band, at the low end of the 5G bundle, and the 39 GHz band, at the high end, the Commission chose to adopt [PEAs]."[14] Notably, the Commission concluded that PEA-based licensing was the best approach for the 39 GHz band despite the fact that its propagation characteristics are inferior to those of lower spectrum bands, such as the 3.5 GHz band. As Verizon previously noted, if "PEAs are

[9] T-Mobile Petition at 16; *see* Comments of AT&T Services, Inc., GN Docket No. 12-354, p. 7 (July 24, 2017) ("AT&T Comments") ("This high number of licenses makes for an incredibly complex auction process with few attendant benefits.").

[10] AT&T Comments at 9; *see* Comments of Qualcomm Incorporated, GN Docket No. 12-354, p. 5 (July 24, 2017) ("Qualcomm Comments") (explaining that census tract-level licensing will involve a "previously unforeseen number of border areas with bi-directional co-channel interference risks"); CTIA Petition at 9 (explaining that census tract-level licensing "creates unnecessary interference risks given the extensive border areas between different licensees operating in adjacent census tracts").

[11] CTIA Petition at 10.

[12] *See Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd 6567, 6597 (2014) ("*Incentive Auction Order*") (finding that PEAs would not "unduly complicat[e] the auction").

[13] *See* Qualcomm Comments at 6 ("The FCC should revise its licensing rules for this band to better match the rules that apply to other licensed bands … for this mid-band spectrum will serve a critical role in mobile providers' ability to provide users a seamless 5G experience.").

[14] Comments of Verizon, GN Docket No. 12-354, p. 8 (July 24, 2017) ("Verizon Comments") (internal citation omitted).

appropriate for targeted deployments in 39 GHz, it stands to reason that they are also appropriate for the 3.5 GHz band."[15]

In addition, due to their larger size, PEAs would greatly reduce the number of border areas, and thereby significantly diminish the risk of interference between geographically-adjacent licensees.[16] As AT&T previously explained, with PEA-based licensing, "buffer zones [could] be accommodated easily by the PAL licensees and operator-to-operator coordination of this type is a well-known practice that has been used to manage license boundaries between licensed spectrum holders for many years."[17] Reducing the number of market borders at which licensees must manage interference would further promote efficient spectrum use by reducing the number of buffer zones required to prevent interference.[18]

Also due to their increased size, PEAs would facilitate the provision of service "on a larger geographic scale, enabling greater efficiencies in deployment and provision of service."[19] Moreover, as the Commission has recognized, because PEAs "can be easily aggregated into larger areas," these license areas would facilitate economies of scale and scope for providers planning to provide service on a larger geographic scale.[20] PEAs, therefore, would better fulfill one of the Commission's goals for the 3.5 GHz band – namely, "allowing easy aggregation to accommodate a larger network footprint."[21]

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[15] *Id.*

[16] *See Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 8014, 8046 (2016) ("*mmW Bands Order*") (finding that licensing the 39 GHz band on the basis of PEAs would "simplify[ ] frequency coordination").

[17] AT&T Comments at 9.

[18] *See id.* at 7.

[19] Comments in Support of Petition for Rulemaking, Boingo Wireless, Inc., GN Docket No. 12-354, p. 2 (July 24, 2017) ("Boingo Wireless Comments").

[20] *Incentive Auction Order*, 29 FCC Rcd at 6597.

[21] *3.5 GHz Order*, 30 FCC Rcd at 3991.

At the same time, PEA-based licensing would continue to provide opportunities for providers interested in serving smaller geographic areas. For instance, in adopting licensing rules for the 600 MHz band, the Commission explained how PEAs are small enough to "encourage entry by providers that contemplate offering wireless broadband service on a localized basis."[22] The Commission also explained that, because "PEAs separate out the urban and rural areas," they allow rural providers "to bid on a geographic area license that better matches their service area."[23] Likewise, with respect to the 39 GHz, the Commission explained that PEAs "facilitat[e] access to spectrum by both large and small providers…"[24]

Moreover, as the Commission previously recognized, the existing light-touch leasing rules for the 3.5 GHz band, "[c]oupled with the availability of 80 MHz or more of GAA spectrum," will "provide the necessary flexibility to service specific or targeted markets."[25] In addition, if the Commission authorizes PALs on the basis of PEAs, USCC encourages it to permit the partitioning and disaggregation of PALs, which the Commission correctly notes will help to both "improve spectral efficiency and facilitate targeted network deployments…"[26] As the Commission previously explained, the flexibility made possible through the partitioning and disaggregation of spectrum facilitates "the efficient use of spectrum by enabling licensees to make offerings directly responsive to market demands for particular types of services, increasing competition by allowing new entrants to enter markets, and expediting provision of services that

[22] *Incentive Auction Order*, 29 FCC Rcd at 6597.

[23] *Id.* at 6600.

[24] *mmW Bands Order*, 31 FCC Rcd at 8046.

[25] *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, 31 FCC Rcd 5011, 5077 (2016) ("*3.5 GHz Recon Order*"); *see* CTIA Petition at 10 ("[T]he existing secondary market rules allow PAL licensees to lease any portion of their spectrum or license outside of their PAL Protection Area, which allows lessees to provide service to targeted areas.").

[26] *NPRM*, 32 FCC Rcd at 8083.

might not otherwise be provided in the near term."[27] Accordingly, despite their larger size, PEAs nevertheless would advance the Commission's goal "to establish the geographic component of PALs in a way that allows flexible and targeted network deployments, promoting intensive and efficient use of the spectrum…"[28]

USCC also notes that, with respect to the 3.5 GHz band, it cannot be reasonably claimed that larger, PEA-based license areas would lead to spectrum warehousing. As the Commission previously explained, the requirement that GAA users be granted access to spectrum that is not in use by PAL licensees will "ensure that the band will be in consistent and productive use."[29] Similarly, in the mmW bands proceeding, the Commission explained how this type of "sharing mechanism can discourage warehousing and other improper behavior that result in spectrum not being used."[30]

Finally, USCC strongly urges the Commission not to permit package bidding, even for a limited number of PALs. As USCC previously has detailed in several Commission proceedings, package bidding creates significant and unwarranted biases in favor of the largest bidders. For instance, package bidding greatly increases the likelihood that the largest bidders will tie up multiple licenses in large package bids to the exclusion of other bidders. Although the bids for individual licenses theoretically could defeat a package bid, for a variety of reasons this outcome is highly unlikely, including the fact that package bidding gives rise to the widely-acknowledged "threshold problem" (*i.e.*, restrained bidding by those seeking individual or a small number of

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[27] *mmW Bands Order*, 31 FCC Rcd at 8094; *see Incentive Auction Order*, 29 FCC Rcd at 6891 ("[A]llowing this type of flexibility can facilitate the efficient use of spectrum, and expedite provision of services in areas that might not otherwise receive service in the near term.").

[28] *3.5 GHz Order*, 30 FCC Rcd at 3991.

[29] *Id.* at 3983.

[30] *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, Notice of Proposed Rulemaking, 30 FCC Rcd 11878, 11941 (2015).

licenses in the hope that bidders for other licenses in the same package will increase their bids sufficiently to defeat the package bid). Moreover, even if the valuations assigned to the individual licenses exceed the valuation the package bidder assigned to the same licenses in formulating its package bid amount, the package bid will almost always prevail because the individual bids typically relate to only a subset of the licenses included in the package. Package bidding, therefore, also can allow large bidders to acquire certain licenses at a discount. In turn, such discounts, coupled with decreased auction participation by smaller bidders as a result of package bidding's well-known bias against these bidders, lead to lower auction revenues.

III. THE COMMISSION SHOULD INCREASE THE PAL TERM TO TEN YEARS AND ADOPT A RENEWAL EXPECTANCY

USCC supports the Commission's proposals to increase the PAL term to ten years and to eliminate the requirement that PALs automatically terminate at the end of each license term.[31] As CTIA previously emphasized, the Commission's current rule, which provides for a PAL term of only three (or, initially, six) years, fails "to recognize the resources, time, and investments required for a successful network buildout."[32] For instance, Nokia has explained that a licensee typically cannot deploy a network for two or more years after acquiring spectrum at auction because "it generally takes several quarters to standardize a new frequency band, another year to develop infrastructure equipment and certify it, and over a year to deploy a network."[33] Notably, initial deployments in the 3.5 GHz band may require even more time. For instance, as explained by AT&T, because "there are several network architecture models that may be possible in the

[31] *See NPRM*, 32 FCC Rcd at 8076.

[32] Reply Comments of CTIA, GN Docket No. 12-354, p. 5 (August 8, 2017) ("CTIA Reply Comments").

[33] Comments of Nokia, GN Docket No. 12-354, p. 4 (July 24, 2017) ("Nokia Comments").

CBRS spectrum," it is "likely that the equipment development challenges seen in other bands will be magnified in the 3.5 GHz environment (because deployments will be more complex)."[34]

Beyond the time required to deploy a network, wireless providers require sufficient time to realize reasonable returns on their investments in a spectrum band. And, with respect to newly-allocated spectrum, like the 3.5 GHz band, providers typically require additional time to realize reasonable returns on their investments given that "large-scale deployment of a new frequency band … often costs billions of dollars."[35] As various parties previously stressed, the existing PAL term falls far short of providing licensees with the time they require to deploy networks and realize reasonable returns on their investments.[36] Although the Commission based its decision not to allow PALs to be renewed in part on its belief that the "return-on-investment determinations for PALs in the 3.5 GHz Band likely involve a lower cost hurdle than in other bands permitting higher-power transmissions,"[37] as noted, wireless providers' plans for the 3.5 GHz band include 4G deployments in the near term and, more importantly, 5G deployments in the future as that technology evolves. The Commission's underlying assumption regarding potential PAL licensees' return-on-investment determinations, therefore, no longer holds true.

These risks associated with short license terms are greatly amplified here due to the lack of an ongoing right of renewal for PALs. In particular, CTIA stressed how the "current three-year PAL term with no ongoing right of renewal creates a risk that a PAL licensee will invest in a license at auction, purchase and deploy equipment, incorporate 3.5 GHz into its end-user

[34] AT&T Comments at 4.

[35] Nokia Comments at 4.

[36] *See*, *e.g.*, T-Mobile Petition at 12 ("Even an initial six-year license term is not sufficient to ensure that licensees will be able to recover a return on investment in the band."); Ericsson Comments at 6 ("[S]ix years is still insufficient to ensure a return on investment."); Boingo Wireless Comments at 1 ("[A] less than 10-year license term is not sufficient to ensure that licensees will be able to recover a return on investment…").

[37] *3.5 GHz Order*, 30 FCC Rcd at 3996.

devices, and then face stranded investment in just three or six years."[38] As a result, "a number of potential bidders for PALs will simply stay away from this band,"[39] which will decrease investment and innovation in the 3.5 GHz band,[40] and potentially undermine the entire the three-tiered sharing regime.[41]

In contrast to the current three-year, non-renewable PAL term, a "ten-year license term combined with an expectation of renewal would facilitate robust markets, substantial investment, and the development of new technologies in the band…"[42] As CTIA explained, "providers are much more likely to make investments in an untried band if they are afforded a reasonable expectation that, should they comply with the Commission's service rules, they have a chance to earn a sufficient return on those investments."[43] A ten-year, renewable license term also would be consistent with the Commission's proven approach in many other bands, including the mmW bands, which also will be used for the deployment of 5G networks. Notably, in adopting this licensing approach for the mmW bands, the Commission explained that such action "will give licensees sufficient certainty to invest in their systems, particularly as the new technology is still nascent and will require time to fully develop."[44]

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[38] CTIA Petition at 6.

[39] Nokia Comments at 5.

[40] *See* Verizon Comments at 6 ("Stakeholders are not likely to continue to shoulder [network buildout] costs if their investments may become stranded upon the premature expiration of a valuable license."); AT&T Comments at 5 ("[T]he certainty associated with longer PAL license terms (along with a renewal expectancy) is vital for infrastructure investments.").

[41] *See* T-Mobile Petition at 11.

[42] *Id.* at 13.

[43] CTIA Reply Comments a 6; *see* Verizon Comments at 4 ("[O]ne of the most effective ways for the Commission to promote deployment is to ensure that wireless providers are not discouraged from making the necessary multi-billion dollar investments due to the risk of losing their licenses only a few years after acquiring them.").

[44] *mmW Bands Order*, 31 FCC Rcd at 8078.

Finally, USCC questions the assumption underlying the Commission's decision not to permit PAL renewals – namely, that the investment made by a licensee that fails to reacquire PAL rights in a subsequent auction would not be stranded because the provider could "use the same equipment in the same area as a GAA licensee."[45] In reality, access to the 3.5 GHz band on a GAA basis would not adequately accommodate a former PAL licensee's operations.[46] Not only do GAA operations lack adequate interference protections, but in high-demand areas, a provider would have no guarantee that GAA spectrum will even be available, let alone in a quantity sufficient to accommodate the provider's existing operations. For these reasons, the ability to operate on a GAA basis following the loss of a PAL does not provide the certainty providers require to justify substantial investments in a new spectrum band.[47]

IV. THE COMMISSION SHOULD REVISE THE COMPETITIVE BIDDING PROCEDURES SO AS NOT TO ARTIFICIALLY RESTRICT THE NUMBER OF AVAILABLE PALs

USCC supports the Commission's proposal "to assign PALs even when there is only one applicant in a given license area, assuming the applicant is otherwise qualified."[48] As the Commission notes, no commenter specifically opposed T-Mobile's proposal that the Commission eliminate the current mutual exclusivity rule.[49] On the other hand, numerous

[45] *3.5 GHz Order*, 30 FCC Rcd at 3996.

[46] *See* T-Mobile Petition at 12 ("The existing framework provides no certainty that a PAL licensee that has built out a network but subsequently loses access to its license will be able to operate adequately on a GAA basis.").

[47] *See* CTIA Petition at 6 ("A provider's 'option' to downgrade and operate on a GAA basis following the loss of a PAL in a subsequent auction does not provide the necessary certainty to justify investments in the band…"); T-Mobile Petition at 12 ("The Commission's assertions … that the ability to switch between PAL use and the GAA tier will sufficiently incentivize investment are unfounded.") (internal citation omitted); Qualcomm Comments at 7 ("[T]he option to operate on a GAA basis following the loss of a PAL in a subsequent auction does not provide the necessary certainty to justify significant investments in the band…").

[48] *NPRM*, 32 FCC Rcd at 8087.

[49] *See id.* at 8086

commenters expressly supported this proposal.[50] Notably, while the Communications Act "does not permit the award of initial licenses through competitive bidding in the absence of mutually-exclusive applications,"[51] as the Commission acknowledged, the Act does *not* prohibit the Commission from granting licenses in the absence of mutual exclusivity.[52] In fact, when it first adopted its competitive bidding rules, the Commission noted that, in the absence of mutually-exclusive applications, it generally would process any applications pursuant to its normal procedures.[53]

USCC also supports the Commission's proposal to repeal the "N-1 policy" in Section 96.29(c) of its rules, pursuant to which one less PAL will be made available in a license area than the total number of PALs in that license area for which applicants have applied.[54] Instead, the number of PALs made available in a given license area should be equal to the number of PALs for which applicants have applied, up to a maximum of seven PALs. These actions would advance the Commission's goal that "PALs should be available for applications that require greater certainty as to interference protection."[55] Such actions also would facilitate the success of the three-tiered spectrum access framework because, absent the quality of service guarantees of PALs, investment in the 3.5 GHz band will suffer.

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[50] *See*, *e.g.*, AT&T Comments at 9; Nokia Comments at 8; 5G Americas Comments of T-Mobile Petition, GN Docket No. 12-354, p. 12 (July 24, 2017) ("5G Americas Comments"); Comments of Ericsson, GN Docket No. 12-354, p. 7 (July 24, 2017) ("Ericsson Comments"); Comments of Motorola Solutions, Inc. in Response to Petitions for Rulemaking, GN Docket No. 12-354, p. 4, n. 2 (July 24, 2017).

[51] *3.5 GHz Order*, 30 FCC Rcd at 4003.

[52] *Id.*

[53] *See Implementation of Section 309(j) of the Communications Act - Competitive Bidding*, Second Report and Order, 9 FCC Rcd 2348, 2376 (1994).

[54] *See NPRM*, 32 FCC Rcd at 8086-87.

[55] *3.5 GHz Order*, 30 FCC Rcd at 4002.

In addition to potentially withholding PALs from qualified applicants desiring PALs, the N-1 policy would "risk systematically phasing out PALs with each subsequent auction."[56] Specifically, the N-1 policy could prevent existing licensees in a given license area from simply maintaining their current number of PALs because, under this policy, the Commission will offer one less PAL for that license area in each subsequent auction absent increased demand for PALs in that license area, which requires either that an existing licensee applies for one or more additional PALs or another party applies for PALs in that license area for the first time. In the absence of such an increase in demand, which may be largely outside of an individual licensee's control, the incumbent licensees in a given license area would be unable to simply retain their existing PALs because the Commission would make one less PAL available for that license area in the subsequent auction. As a result, the N-1 policy will discourage investment in the 3.5 GHz band because, due to the uncertainty "as to whether [licensees] will be able to maintain their operations after the initial license period expires,"[57] licensees will fear that their investments will be stranded.

If the Commission eliminates the mutual exclusivity requirement and N-1 policy, USCC believes that the best approach for the PAL auction would be to offer seven PALs in every license area via an ascending clock auction format, regardless of the number of PAL applicants for any license area. Under this approach, the PALs in each license area would be subject to a minimum opening bid, as well as the existing spectrum aggregation limit of four PALs. If the aggregate demand in a license area does not exceed seven PALs, the applicant(s) would receive the number of PALs for which they applied, subject to the payment of the minimum opening bid

[56] T-Mobile Petition at 13.

[57] *Id.* at 14.

for those PALs. To the extent that aggregate demand is less than seven PALs for a given license area, the Commission would assign the number of PALs for which there was demand, again subject to the payment of the opening minimum bid for those PALs, and the remaining spectrum in that license area would be made available on a GAA basis.

USCC stresses that eliminating both the mutual exclusivity requirement and the N-1 policy in order to ensure the availability of PALs is necessary given the significant importance of exclusive-use spectrum to many wireless service providers and users. For instance, a variety of potential CBR Service providers require the quality of service guarantees that will only be available in the 3.5 GHz band via a PAL, including broadband service providers, hospitals, utilities and other critical infrastructure industries, and providers of video surveillance, telemetry, and monitoring services.[58] Insufficient demand by other auction participants in no way diminishes a provider's need for exclusive-use spectrum,[59] so it should have no bearing on the ability of an otherwise qualified applicant to acquire the PAL(s) it requires to provide service to the public. Potential licensees, therefore, should not be denied crucial quality of service guarantees based solely on the demand, or lack thereof, expressed by other auction participants.

Notably, the Commission already agreed with the logic of this reasoning when it adopted the "rural area" exception to the mutual exclusivity requirement. Although a lack of mutual exclusivity may be more likely in rural license areas, the Commission adopted this exception to create an opportunity for providers in these areas "to secure assured exclusive access to

[58] *See 3.5 GHz Order*, 30 FCC Rcd at 3988 ("[M]any entities besides mission critical users seek access to the type of 'quality assured' spectrum that PALs provide.").

[59] *See 3.5 GHz Recon Order*, 31 FCC Rcd at 5024 ("Petitioners indicate that there may be certain types of users or applications that will require PALs for their operations, regardless of whether there are competing users filing applications in a given census tract.").

spectrum,"[60] not as a result of the greater likelihood that mutual exclusivity may not arise in such areas. This reasoning applies equally to every provider that requires exclusive-use spectrum, regardless of location.[61] USCC's proposed approach also would not be based on an inherently arbitrary distinction between a license area that qualifies for the "rural area" exception and a license area with a slightly higher population density.

Moreover, the Commission's reasons for adopting the mutual exclusivity requirement and N-1 policy fail to justify depriving the public of new services that require guaranteed access to interference-free spectrum. For instance, the Commission adopted these two limitations on the assignment of PALs based in part on its belief that the grant of PALs in the absence of mutual exclusivity "would not result in as efficient an assignment of the spectrum as licensing the spectrum for shared GAA use."[62] However, even without these limitations, any unsold PAL frequencies would be made available solely to GAA users, and GAA users also would continue to have opportunistic access to PAL frequencies that are not in actual use by a licensee, which the Commission explained will "ensure that the band will be in consistent and productive use."[63] In other words, even in the absence of mutual exclusivity, spectrum will not lie fallow if there is demand for it by either a PAL licensee or GAA user, and thus, the Commission will continue to "ensure that the spectrum will be put to a use for which [it has] identified a clear public interest need, including by those who have filed PAL applications as well as others."[64]

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[60] *Id.*

[61] *See id.* at 5025 ("Whether or not a business desires exclusivity is independent of whether there is a market-based need for exclusivity caused by rising demand for the spectrum.").

[62] *NPRM*, 32 FCC Rcd at 8087.

[63] *3.5 GHz Order*, 30 FCC Rcd at 3983.

[64] *Id.* at 4004.

The Commission also based its decision to adopt these two limitations on the assignment of PALs in part on its belief that, "[i]n the absence of multiple competing applications … there should be ample GAA spectrum available for interested parties, thereby obviating the need for exclusive rights."[65] As Commissioner O'Rielly previously stressed, however, a "lack of multiple auction participants does not mean that the available GAA spectrum is sufficient to meet everyone's needs and, therefore, PALs are not necessary."[66] Moreover, as discussed above, the GAA tier cannot provide the quality of service guarantees required by many potential CBR Service providers and users.

USCC notes that, by granting PAL licensees a right of renewal, the Commission would remove the risk that the N-1 policy would gradually phase out all of the PALs in some license areas. USCC also notes that the adoption of PEA-based license areas, a ten-year PAL term, and a right of renewal would make PALs far more attractive to potential bidders. In turn, demand for PALs would increase, mutual exclusivity would become more likely, and the odds that either the mutual exclusivity or N-1 policy arbitrarily withholds PALs from providers requiring quality of service guarantees would be reduced.

Even with these other actions, however, USCC believes the Commission should eliminate both of the current limitations on the assignment of PALs because these rules likely still would, on occasion, have the effect of withholding a PAL from an otherwise qualified applicant for reasons beyond the applicant's control. Eliminating these restrictions will be even more important if the Commission adopts the other revisions to the PAL licensing framework currently under consideration because, as a result of those revisions, a bidder that is arbitrarily

[65] *3.5 GHz Recon Order*, 31 FCC Rcd at 5024.

[66] *Id.* at 5131 (Statement of Commissioner Michael O'Rielly, Approving in Part, Dissenting in Part).

denied a PAL due to insufficient demand by other auction participants would be disadvantaged to an even greater extent. For instance, as the Commission notes, if it adopts the other changes to the PAL licensing framework, a provider's need for PALs likely will increase given that "the use case for PALs could vary more significantly from GAA use than under [the] current rules."[67]

V. THE COMMISSION SHOULD PROHIBIT THE PUBLIC DISCLOSURE OF CBSD REGISTRATION INFORMATION

As CTIA previously emphasized, "making [CBSD] registration information publicly available risks potentially severe competitive, consumer, national security, and cybersecurity-related harms."[68] Clearly, the current requirement that SAS Administrators "obfuscate the identities of the licensees providing the information for any public disclosures"[69] fails to adequately address these concerns. As Ericsson explained, "[g]iven that PAL auction information will be publicly available, determining which deployments belong to which PAL licensee may not be difficult."[70]

Although the Commission's proposal "to prohibit SASs from disclosing publicly CBSD registration information that may compromise the security of critical network deployments or be considered competitively sensitive"[71] would be an improvement over the current rule, USCC believes the better, and simpler, approach would be for the Commission to outright prohibit the public disclosure of CBSD registration information. For instance, the Commission's proposal would require it to delineate the "specific information [that] should be withheld from public

[67] *NPRM*, 32 FCC Rcd at 8087.

[68] CTIA Reply Comments at 7.

[69] 47 C.F.R. §96.55(a)(3).

[70] Ericsson Comments at 9; *see* CTIA Petition at 12; T-Mobile Petition at 20.

[71] *NPRM*, 32 FCC Rcd at 8085.

disclosure,"[72] and presumably also require CBR Service providers and SAS Administrators to accurately identify and catalog the registration information intended to be withheld from public disclosure. SAS Administrators then would need to implement a system to allow the sharing of all necessary information with the other SAS Administrators while also ensuring the security of the information deemed confidential.

An outright prohibition on the public disclosure of registration information, on the other hand, would free both CBR Service providers and SAS Administrators from these additional burdens, while likely also providing additional security for confidential registration information. Notably, an outright prohibition would not, in any way, negatively impact the three-tiered sharing framework or prevent GAA and PAL users from planning deployments.[73] As CTIA explained, because "SAS Administrators are separately required to work with each other to coordinate frequency assignments and avoid interference between CBSDs," members of the public would "coordinate with a SAS to determine where they can deploy CBSDs on a GAA basis"[74] just as they would under the current rule. In other words, the disclosure of CBSD registration information to the general public "does not serve any relevant purpose."[75] USCC therefore joins numerous past petitioners and commenters in urging the Commission to prohibit outright the public disclosure of CBSD registration information.[76]

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[72] *Id.*

[73] *See* CTIA Petition at 11-12; Reply Comments of AT&T Services, Inc., GN Docket No. 12-354, p. 8 (August 8, 2017) ("AT&T Reply Comments"); Ericsson Comments at 8-9.

[74] CTIA Petition at 11; *see* AT&T Reply Comments at 8; Ericsson Comments at 8-9.

[75] T-Mobile Petition at 20.

[76] *See* CTIA Petition at 12; T-Mobile Reply Comments at 19; Ericsson Comments at 9; AT&T Comments at 11; Verizon Comments at 9; Nokia Comments 8; 5G Americas Comments at 13.

VI. CONCLUSION

USCC urges the Commission to revise the PAL licensing rules in the ways discussed herein in order to eliminate, or at least significantly reduce, the complexity and uncertainty inherent in the current rules. A failure to sufficiently address these issues will lead to far less interest in PALs, and thus, significantly decreased investment and innovation in the 3.5 GHz band to the detriment of both PAL licensees and GAA users.

Respectfully submitted,

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