

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

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

**REPLY COMMENTS OF UNITED STATES CELLULAR CORPORATION**

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## TABLE OF CONTENTS

I.	INTRODUCTION & SUMMARY.....	1
II.	PALs SHOULD BE AUTHORIZED ON THE BASIS OF PEAs, RATHER THAN CENSUS TRACTS.....	3
III.	THE COMMISSION SHOULD INCREASE THE PAL TERM TO TEN YEARS AND ADOPT A RENEWAL EXPECTANCY.....	9
IV.	THE COMMISSION SHOULD REVISE THE COMPETITIVE BIDDING PROCEDURES SO AS NOT TO ARTIFICIALLY RESTRICT THE NUMBER OF AVAILABLE PALs.....	12
V.	THE COMMISSION SHOULD PROHIBIT THE PUBLIC DISCLOSURE OF CBSD REGISTRATION INFORMATION.....	16
VI.	CONCLUSION.....	17

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United States Cellular Corporation (“USCC”) submits these reply comments in response to the Notice of Proposed Rulemaking released by Commission in the above-captioned proceeding on October 24, 2017, as well as the comments filed in response to that Notice.<sup>1</sup> For the reasons detailed herein, USCC continues to support many of the Commission’s proposed changes to its 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 again urges the Commission to prohibit the public disclosure of Citizens Broadband Radio Service Device (“CBSD”) registration information.

**I. INTRODUCTION & SUMMARY**

USCC commends the Commission for its efforts in creating the Citizens Broadband Radio Service (“CBRS”) in order to allow commercial use of the 3.5 GHz band, which will play a vital role in wireless providers’ efforts to expand the capacity of their 4G networks and to

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<sup>1</sup> See *Promoting Investment in the 3550-3700 MHz Band*, Notice of Proposed Rulemaking and Order Terminating Petitions, 32 FCC Rcd 8071 (2017) (“*NPRM*”). All comments cited herein were filed in the above-referenced docket on December 28, 2017.

deploy next-generation 5G networks. USCC remains concerned, however, that the complexity and uncertainty inherent in some of the current rules governing PALs will discourage investment in the 3.5 GHz band. USCC therefore urges the Commission to make several changes to the current PAL rules, all of which are generally consistent with the Commission's proposals, in order to provide prospective PAL licensees with the certainty they require to make significant investments in the 3.5 GHz band, and thereby ensure the success of the CBRS for the benefit of both other PAL licensees and General Authorized Access ("GAA") users.

Specifically, USCC urges the Commission to authorize PALs on the basis of Partial Economic Areas ("PEAs"), which are large enough to mitigate the administrative burdens, auction complexity, and interference risks associated with the current census tract-based PALs, but also small enough to permit targeted service deployments. USCC also urges the Commission to increase the term of PALs from three to ten years, and to provide PAL licensees with a right of renewal, in order to provide licensees sufficient time to build out their networks and to remove the risk that licensees' investments in the 3.5 GHz band will become stranded.

In addition, USCC supports the Commission's proposals to eliminate two rules that would artificially restrict the number of PALs made available in a given license area, and thereby, withhold PALs from qualified applicants that require the quality of service guarantees that will only be available in the 3.5 GHz band via a PAL. Finally, USCC urges the Commission to prohibit the public disclosure of CBSD registration information in order to prevent competitively sensitive and security-related information from falling into the wrong hands.

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

Various commenters joined USCC in urging the Commission to increase the geographic licensing area of PALs,<sup>2</sup> and specifically to authorize PALs on the basis of PEAs rather than at the census tract level,<sup>3</sup> which would involve 74,000 license areas and up to 518,000 PALs. Like USCC, CTIA and other commenters stressed that such a large number of license areas and PALs “would result in a much more complicated and burdensome licensing scheme to administer and manage,”<sup>4</sup> and thereby greatly depress interest, innovation, and investment in the 3.5 GHz band.

For instance, census tract-level licensing would give rise to potentially insurmountable interference risks.<sup>5</sup> As T-Mobile explained, geographically-adjacent licensees using Time Division Duplex air interfaces, as will be the case in the 3.5 GHz band, typically coordinate their operations because they have both uplink and downlink transmissions on the same channel, but at different times.<sup>6</sup> Licensees in the 3.5 GHz band, however, will not have static channel assignments, and thus, will not be able to enter into coordination agreements with adjacent-area operators. Instead, geographic “buffer zones” near the boundaries of every license area will be required to ensure interference-free operations between PALs. With census tract-based licensing, there would be an extraordinary number of service area boundaries, and thus, an

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<sup>2</sup> See, e.g., Comments of Comcast Corporation, p. 6 (“Comcast Comments”); Comments of NCTA – The Internet & Television Association, p. 4 (“NCTA Comments”); Comments of Nokia, p. 4 (“Nokia Comments”); Comments of the Blooston Rural Carriers, p. 4.

<sup>3</sup> See, e.g., Comments of CTIA, p. 8 (“CTIA Comments”); Comments of T-Mobile USA, Inc., p. 9 (“T-Mobile Comments”); Comments of AT&T Services, Inc., p. 5 (“AT&T Comments”); Comments of Verizon, p. 8 (“Verizon Comments”); Comments of Mobile Future, p. 7 (“Mobile Future Comments”); Comments of the Telecommunications Industry Association, p. 3 (“TIA Comments”).

<sup>4</sup> CTIA Comments at 8; see AT&T Comments at 5 (emphasizing that census tract-based licensing would “create an unnecessarily complex and burdensome auction framework”).

<sup>5</sup> See Verizon Comments at 10 (“[Census tracts] could create substantial interference risks...”); AT&T Comments at 5 (“Census Tract[s] greatly complicate[] the ability of PAL licensees to effectively manage interference borders.”).

<sup>6</sup> See T-Mobile Comments at 9.

extraordinary number of required buffer zones. As Verizon emphasized, this “would significantly limit the utility of the band and result in less efficient and intensive use,” and in turn, “deflate service provider interest in the band and reduce investment in technology.”<sup>7</sup>

In addition, USCC previously explained how auctions of census tract-based PALs would be exceedingly complex, and thus, burdensome. In arguing that an auction of 518,000 would, in fact, be manageable, the Wireless Internet Service Providers Association (“WISPA”) relied on Professor Paul Milgrom’s previous statement that the approximately one billion active eBay listings indicate that “there is no technical reason that an auction platform cannot simultaneously manage tens of thousands of PALs, nor any inherent reason that bidders must be overwhelmed by or unable to navigate such a system.”<sup>8</sup> This argument, however, fails to acknowledge the significant differences between spectrum and eBay auctions. For instance, most sellers on eBay have only a few products for sale at any given time, and most buyers on eBay are seeking to make one or a small number of purchases. In contrast, with census tract-based licensing for the 3.5 GHz band, the Commission would be “selling” all 518,000 PALs, and even small and regional carriers potentially would be seeking to acquire thousands, if not tens of thousands, of PALs. Thus, even if an automated auction system could manage all 518,000 PALs simultaneously, this argument ignores the fact that bidders need to continuously make decisions with respect to each PAL they hope to acquire as prices increase throughout an auction. While nationwide carriers obviously have far greater resources to manage spectrum auctions, those

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<sup>7</sup> Verizon Comments at 10-11; *see* T-Mobile Comments at 9 (“[S]mall geographic licenses present technical challenges that can lead to inefficient use of spectrum.”).

<sup>8</sup> Comments of the Wireless Internet Service Providers Association, pp. 37-38 (“WISPA Comments”) (quoting Letter from Paul Milgrom, Auctionomics, to Marlene H. Dortch, FCC, GN Docket No. 12-354, p. 2 (Aug. 7, 2017) (“Milgrom Paper”)).

carriers potentially would need to bid on well over 100,000 PALs in order to acquire sufficient bandwidth across their service footprints.

WISPA also argues that the Commission's successful completion of the Incentive Auction, "which is universally regarded as the most complex spectrum auction in history," demonstrates that it "can certainly design and implement simple, straightforward auctions for census tracts."<sup>9</sup> Again, however, WISPA fails to acknowledge the significant differences between the two auctions. USCC agrees that the Incentive Auction was an immensely complex undertaking, but that complexity arose because of the interplay between the reverse and forward auction components of the overall auction framework. For wireless bidders, however, the Incentive Auction was less complicated than many of the Commission's past spectrum auctions, especially after the initial stages, once all of the 600 MHz licenses were unencumbered, and thus, fungible. At that point, as a result of the clock auction format, wireless bidders simply needed to adjust their demand levels amongst the 416 PEA-based license areas. Presumably, unless the Commission permits frequency-specific bidding in the PAL auction, it likewise will implement a clock auction for the assignment of PALs. In an auction for census tract-based PALs, however, bidders would need to manage their demand across approximately 178 times the number of license areas that they needed to manage in the Incentive Auction in order to acquire spectrum rights covering a comparable amount of geography. Moreover, as Verizon noted, even if the challenges associated with auctioning such a large number of licenses can be overcome, subsequently "*managing* such a large number of census tract licenses will be exceedingly difficult for both licensees and the Commission."<sup>10</sup>

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<sup>9</sup> *Id.* at 38.

<sup>10</sup> Verizon Comments at 12 (emphasis added).

In stark contrast to census tract-based licensing, the use of PEA-based license areas “would stimulate investment, promote innovation, and encourage efficient use of spectrum resources.”<sup>11</sup> For instance, in addition to greatly simplifying the auction process,<sup>12</sup> PEA-based licensing would greatly reduce the burden of managing PALs for both the Commission and licensees. 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.<sup>13</sup> PEA-based licensing for the 3.5 GHz band, therefore, “would provide a more consistent and rationalized license structure across all potential 5G bands.”<sup>14</sup> Notably, PEA-based licensing is even more appropriate here than in the millimeter wave bands given the 3.5 GHz band’s superior propagation characteristics.<sup>15</sup>

In addition, due to their larger size, PEAs would greatly reduce the number of border areas, and thereby significantly mitigate the interference concerns associated with census tract-based PALs discussed above and “enable[] far more efficient and intensive use of the band.”<sup>16</sup> Also due to their larger size, PEAs would facilitate the provision of service on a larger geographic scale, enabling more efficient network deployments. As T-Mobile explained, while “it may be possible to combine census tract licenses to reflect market realities, doing so

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<sup>11</sup> *Id.* at 8.

<sup>12</sup> *See* Mobile Future Comments at 8.

<sup>13</sup> *See* Verizon Comments at 9 (“Most of the major bands that will comprise the 5G ecosystem are already licensed by PEA...”).

<sup>14</sup> *Id.*; *see* T-Mobile Comments at 11 (noting that PEA-based licensing “would preserve consistency between 5G operations in the 3.5 GHz band and in other bands”).

<sup>15</sup> *See* TIA Comments at 3.

<sup>16</sup> Verizon Comments at 10; *see* AT&T Comments at 6 (“Licensing on a PEA basis would reduce ... the number of border areas that PAL licensees will need to manage, greatly simplifying licensing in the 3.5 GHz band, mitigating interference concerns, and promoting effective and efficient spectrum use.”); Mobile Future Comments at 7-8 (“[PEAs] will dramatically reduce the number of license areas ... thereby reducing interference risks and burdensome coordination between licensees at license border areas.”).



introduces unnecessary risk and complexity, which will decrease investment and potentially delay deployment of service.”<sup>17</sup> The significant investment that would result from PEA-based licensing also will be essential to the availability of equipment for the 3.5 GHz band, especially at a reasonable cost. As Verizon explained, “for the 3.5 GHz band to meet its full potential, it needs the efficiencies of scale and guarantees of equipment volume that large carriers provide to enable equipment vendors to make the substantial investments in research, development, and manufacturing that they require to create a robust equipment ecosystem in a newly available band.”<sup>18</sup> Significantly, GAA users also would greatly benefit from this consequence of PEA-based licensing as a result of the operability requirement for the 3.5 GHz band.

In addition to spurring investment and innovation in the 3.5 GHz band, PEA-based licensing would continue to provide opportunities for service providers interested in serving smaller geographic areas. As T-Mobile pointed out, the “Commission has recognized the benefits of PEA-based licensing in multiple other bands, noting that it encourages investment by a wide variety of entities.”<sup>19</sup> Moreover, as USCC previously explained, any lingering concerns regarding smaller bidders’ ability to acquire PEA-based PALs can be addressed by authorizing licensees to partition and disaggregate PALs. Notably, a large majority of the commenters that addressed this issue likewise urged the Commission to allow the partitioning and disaggregation of PALs in order to increase licensee flexibility and permit targeted, local deployments. For instance, T-Mobile explained how partitioning and disaggregation would “allow entities with limited needs to enter into transactions tailored to the area or amount of spectrum they desire,”<sup>20</sup>

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<sup>17</sup> T-Mobile Comments at 9.

<sup>18</sup> Verizon Comments at 11.

<sup>19</sup> T-Mobile Comments at 10; *see* CTIA Comments at 9 (“PEAs ... strike the appropriate balance of facilitating access to spectrum for both large and small providers.”).

<sup>20</sup> T-Mobile Comments at 12.

and Mobile Future noted how these secondary market transactions would “provide opportunities for smaller providers seeking to offer service to smaller, more focused areas.”<sup>21</sup>

Various commenters also joined USCC in noting that, with respect to the 3.5 GHz band, it cannot be reasonably claimed that PEA-based license areas would lead to spectrum warehousing. For instance, AT&T explained that, “because the unique tiered structure of the 3.5 GHz band allows for opportunistic use, there are already protections in place to prevent spectrum warehousing.”<sup>22</sup> Ericsson similarly noted how “GAA’s opportunistic use of unused CBRs spectrum helps ensure that the spectrum will be used, not warehoused.”<sup>23</sup>

USCC further urges the Commission to decline to adopt a “hybrid” geographic area licensing approach involving more than one license area size, regardless of whether such an approach involves different license area sizes for urban and rural areas or dividing the 70 megahertz of PAL spectrum between smaller and larger license areas nationwide. As Verizon explained, such an approach “could result in a chaotic hodgepodge of licenses” that “would further complicate the auction process, make effective price discovery substantially more difficult, and potentially reduce auction participation and revenues.”<sup>24</sup>

Finally, USCC again strongly urges the Commission not to permit package bidding, even for a subset of PALs, because of the significant and unwarranted biases package bidding creates in favor of the largest bidders. As USCC previously explained, package bidding greatly increases the likelihood that the largest bidders will tie up multiple licenses in large package bids

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<sup>21</sup> Mobile Future Comments at 10; *see* CTIA Comments at 10 (“Allowing petitioning and disaggregation will [ ] foster access to PAL spectrum for targeted, local deployments while ensuring effective and efficient spectrum use.”); Verizon Comments at 14 (“[P]artitioning and disaggregation will enable targeted deployments without imposing the additional burden of administering 518,000 licenses.”).

<sup>22</sup> AT&T Comments at 13.

<sup>23</sup> Comments of Ericsson, p. 6 (“Ericsson Comments”).

<sup>24</sup> Verizon Comments at 13.

to the exclusion of other bidders, and can even result in large bidders acquiring some of the licenses within a package at a discount. Notably, no commenter expressed unqualified support for package bidding, and the few commenters that expressed some preference for package bidding over licensing the 3.5 GHz on a basis license areas larger than census tracts acknowledged the significant disadvantages of package bidding for smaller bidders.<sup>25</sup>

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

USCC again urges the Commission to adopt its 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, both of which have strong record support.<sup>26</sup> As TIA and others stressed, “the current three-year PAL term with no renewal rights significantly undermines incentives for operators to invest in the band.”<sup>27</sup> As CTIA explained, this unreasonably short license term “fails to account for the challenges associated with standards development, equipment certification and production, network deployment, and addressing backhaul capacity needs, let alone the siting approval process.”<sup>28</sup> These various pre-deployment actions alone, AT&T noted,

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<sup>25</sup> See WISPA Comments at 35 (“As a general proposition, package bidding to allow larger geographic PALs to be aggregated would be a step in the wrong direction ... because large companies could simply bid more money to acquire a package of licenses encompassing a large area ... to the detriment of bidders seeking to provide service over smaller geographic footprints.”); Comments of Open Technology Institute at New America and Public Knowledge, pp. 28-29 (noting that they previously opposed package bidding in PAL auctions because it “could completely negate the benefits of small licensing areas” and “deny even a single license to local entities seeking one or more PALs for very localized purposes ... even if they were willing to bid more for that particular license than a large regional operator”).

<sup>26</sup> See, e.g., CTIA Comments at 4; T-Mobile Comments at 4; AT&T Comments at 3; Verizon Comments at 4; Mobile Future Comments at 5; Nokia Comments at 1; Ericsson Comments at 5; TIA Comments at 2; Joint Comments of the National Rural Telecommunications Cooperative and the National Rural Electric Cooperative Association, p. 4 (“NRTC/NRECA Comments”).

<sup>27</sup> TIA Comments at 2; *see also* CTIA Comments at 5 (“[A] three-year non-renewable license term would have a real, negative impact on investment in the band.”).

<sup>28</sup> CTIA Comments at 4; *see* Comcast Comments at 18 (“A three-year license term [ ] ignores the substantial barriers that continue to impede deployment of broadband infrastructure.”).

“will most likely well exceed the current license terms...”<sup>29</sup> Significantly, initial deployments in the 3.5 GHz band likely will require even more time than most other spectrum bands “given the significant planning and testing involved in deploying new technology...”<sup>30</sup>

In addition to providing a reasonable period of time to deploy networks in a newly-allocated spectrum band, the applicable license term also must provide licensees “with the opportunity to earn a sufficient return on network investments” in order to spur adequate investment in a spectrum band.<sup>31</sup> Providing sufficient time for licensees to realize reasonable returns on their investments is particularly important for spurring much-needed investment in rural areas, where returns on investment take longer as a result of the lower population densities in such areas.<sup>32</sup>

In addition, the inability to renew PALs under the current rules greatly amplifies the uncertainty related to the short, three-year license term, and thus, will further dissuade substantial investment in the 3.5 GHz band. As Mobile Future noted, under the current licensing framework, PAL licensees “risk having their investment stranded in just three (or initially six) years.”<sup>33</sup> Ultimately, AT&T explained, this uncertainty and attendant depressed investment “will harm not only PAL licensees, but also GAA operators by discouraging the creation of a healthy ecosystem for 3.5 GHz devices and infrastructure.”<sup>34</sup>

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<sup>29</sup> AT&T Comments at 5; *see* T-Mobile Comments at 4 (“[N]etwork deployment is a multi-year process even in typical circumstances...”).

<sup>30</sup> Mobile Future Comments at 6.

<sup>31</sup> CTIA Comments at 4; *see* Ericsson Comments at 5 (“To attract new investment, operators and other potential users of the band require certainty well beyond the three-year, non-renewable terms...”).

<sup>32</sup> *See* CTIA Comments at 4.

<sup>33</sup> Mobile Future Comments at 6.

<sup>34</sup> AT&T Comments at 4.

In contrast to the current three-year, non-renewable PAL term, a ten-year term with a right of renewal would properly “take into account the realities involved in a successful network buildout.”<sup>35</sup> This licensing framework therefore would “reduce the risk that a PAL licensee – having won a license at auction and invested in deploying a network – will face stranded investment after acquiring its authorization.”<sup>36</sup> As a result, it would “increase incentives for future investment by creating greater operational stability for licensees.”<sup>37</sup> As CTIA and other commenters underscored, this increased certainty will prove “particularly important for investment in rural areas where returns take longer to achieve.”<sup>38</sup> 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.

Finally, USCC urges the Commission to reject the suggestion by some that it adopt a proposal filed last year by Professor Paul Milgrom that would retain the three-year PAL term with no possibility of renewal, but would provide incumbent licensees with bidding credits in subsequent re-auctions of PALs.<sup>39</sup> As T-Mobile explained, this approach would significantly depress investment in the 3.5 GHz band because it “would still leave too much uncertainty as to a licensee’s ability to retain its authorization...”<sup>40</sup> In addition, CTIA explained that, because this proposed auction design “is intended to ‘create something resembling an active secondary

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<sup>35</sup> CTIA Comments at 6.

<sup>36</sup> T-Mobile Comments at 4.

<sup>37</sup> Verizon Comments at 5; *see* Comcast Comments at 20 (“An option to renew would significantly improve the business case for initial investment in PALs by removing the uncertainty created by the need to participate in regular auctions to retain priority access.”); AT&T Comments at 3 (a ten-year license term with a right to renewal “will promote investment by reducing the risk of stranding assets”).

<sup>38</sup> CTIA Comments at 6; *see* NRTC/NRECA Comments at 4 (a ten-year, renewable PAL term “would provide rural service providers and utilities the long-term certainty required to invest in mission critical solutions utilizing the CBRS spectrum”).

<sup>39</sup> *See* CTIA Comments at 6; T-Mobile Comments at 5; Verizon Comments at 5.

<sup>40</sup> T-Mobile Comments at 5.

market,” it is unnecessary given that “the CBRS framework provides for secondary market transactions already...”<sup>41</sup> Moreover, as noted, there is significant record support for the Commission to add the ability to partition and disaggregate PALs to the secondary market transactions already authorized for the 3.5 GHz band.

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

USCC again urges the Commission to adopt its proposal “to assign PALs even when there is only one applicant in a given license area, assuming the applicant is otherwise qualified,”<sup>42</sup> as well as its 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.<sup>43</sup> 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. Significantly, there was near unanimous agreement amongst commenters in support of these proposals.<sup>44</sup>

As USCC and others emphasized in their comments, the Commission’s current rules artificially, and unnecessarily, restrict the number of PALs that will be made available both in the initial and subsequent PAL auctions.<sup>45</sup> Such an approach is particularly ill-advised given that

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<sup>41</sup> CTIA Comments at 6-7 (quoting Milgrom Paper at 6).

<sup>42</sup> *NPRM*, 32 FCC Rcd at 8087.

<sup>43</sup> *See id.* at 8086-87.

<sup>44</sup> *See, e.g.*, CTIA Comments at 13; T-Mobile Comments at 14; AT&T Comments at 9; Nokia Comments at 6; Ericsson Comments at 7; Comments of Microsoft Corporation, p. 8; NCTA Comments at 14-15; Comcast Comments at 22; Comments of Alaska Communications, p. 9 (“Alaska Communications Comments”); Comments of Cantor Telecom Services, L.P. in Response to Notice of Proposed Rulemaking, p. 11; WISPA Comments at 51; Joint Comments of the Telecommunications Subcommittee of the American Petroleum Institute and the Regulatory and Technology Committee of the Energy Telecommunications and Electrical Association, p. 3.

<sup>45</sup> *See* Nokia Comments at 6 (“The Commission’s rules currently create artificial scarcity for PALs.”); Comcast Comments at 22 (“These current licensing limitations ... only serve to artificially constrain the supply of PALs.”).

PAL applicants will be “seeking guaranteed spectrum with interference protection from GAA users.”<sup>46</sup> Insufficient demand for the PALs in a given license area generally will have no bearing on a service provider’s need for the quality of service guarantees that will only be available in the 3.5 GHz band via a PAL. Myriad providers of services that are critical to individual members of the public and the nation as a whole, including broadband service providers, hospitals, utilities and other critical infrastructure industries, and providers of video surveillance, telemetry, and monitoring services, require consistent, interference-free spectrum access. Accordingly, as Nokia underscored, it “would not serve the public interest to deny the benefits of a PAL to a qualified applicant ... simply because there was not enough demand by others to compete for PAL rights.”<sup>47</sup>

In addition to potentially withholding PALs from qualified applicants desiring PALs, USCC previously explained how the N-1 policy would risk systematically phasing out PALs over time unless one of the existing licensees in a license area applies for an additional PAL in each subsequent auction or a non-incumbent licensee applies for a PAL in that license area. In other words, the N-1 policy could prevent an incumbent licensee from simply maintaining its current number of PALs unless it applies for a license it may not need (or may not even have the means to acquire) or demand for that license area increases as a result of the actions of another applicant, which would be entirely outside of the incumbent licensee’s control. For this reason,

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<sup>46</sup> Nokia Comments at 6.

<sup>47</sup> *Id.*; see Ericsson Comments at 7 (“The protections afforded by PALs are of real value, and the fact that there might be limited interest in certain markets should not therefore dictate a policy that makes none available.”); NCTA Comments at 14 (“[T]his mechanism means that protected spectrum availability will be driven by who else applies rather than by the quality of service needs of a network operator and its customers.”).

as AT&T explains, the N-1 policy would “breed[] uncertainty, hindering investment and innovation and ultimately impeding the deployment of innovative services.”<sup>48</sup>

If the Commission eliminates the mutual exclusivity requirement and N-1 policy, USCC continues to believe 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 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 notes that, because 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, demand for PALs would increase and a lack of mutual exclusivity would be unlikely.<sup>49</sup> Nevertheless, in order to better ensure broad mutual exclusivity, USCC joins AT&T in urging the Commission to follow its standard practice in recent spectrum auctions and allow prospective bidders to specify in their short-form applications an interest in bidding on every license area, rather than on only a

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<sup>48</sup> AT&T Comments at 10.

<sup>49</sup> See T-Mobile Comments at 14 (explaining that, because the proposed revisions to the PAL licensing framework would “make PALs more attractive and useful for a wide variety of licensees,” it would be “likely that there will be more applicants for PALs than there are PALs available in any given license area”).



subset of the license areas.<sup>50</sup> As AT&T explained, if “more than one bidder indicates that it wishes to bid in all areas, the Commission would have mutual exclusivity in all areas, even if there only ends up being one bidder in an area.”<sup>51</sup> In that case, or if actual demand for a license area does not exceed seven PALs, those bidders that did express demand in that license area would receive their requested number of PALs, up to a maximum of four PALs, subject to payment of the minimum opening bid.<sup>52</sup>

USCC notes that its proposed approach to the PAL auction discussed above is premised on the existence of mutual exclusivity. If the Commission adopts its proposed revisions to the PAL licensing framework, and also permits the selection of “all areas” in the short-form application for the PAL auction, USCC believes it will be very unlikely that the Commission will lack auction authority with respect to any license area. Accordingly, the Commission likely will not be required to assign any PALs on a non-auctioned basis despite the elimination of both the current mutual exclusivity rule and the N-1 policy.

Finally, 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 to the detriment of the incumbent licensees. USCC, however, urges the Commission to nevertheless eliminate the N-1 policy, especially given that the policy still could have the effect of withholding PALs in subsequent auctions from qualified applicants in license areas with fewer than seven PALs as a result of low demand in the initial auction.

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<sup>50</sup> See, e.g., *Auction of Advanced Wireless Services (AWS-3) Licenses Scheduled for November 13, 2014*, Public Notice, 29 FCC Rcd 8386, 8461 (2014).

<sup>51</sup> AT&T Comments at 10.

<sup>52</sup> See *id.*

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

USCC, like a majority of other commenters, again urges the Commission to prohibit the public disclosure of CBSD registration information.<sup>53</sup> As Verizon stressed, the “existing rules fail to adequately ensure the privacy of competitively sensitive and security-related network information.”<sup>54</sup> For instance, CTIA explained how “the requirement that SAS Administrators publicly release the geographic location of CBSDs could increase security risks,” and how this requirement is inconsistent with the Commission’s general approach to critical infrastructure.<sup>55</sup>

CTIA also explained how the disclosure of other CBSD registration information (*e.g.*, FCC identification number, manufacturer serial number, user contact information, and call sign) raises competitive concerns because such disclosures “could enable competitors to determine the extent of a CBRS user’s deployment in the band, thereby informing PAL acquisition strategies, customer acquisition strategies ... and/or competitor expansion strategies.”<sup>56</sup> Even more troubling, the disclosure of such information “could provide a bad actor the ability to identify actual users or provide greater precision to commit a malicious act against a particular network deployment.”<sup>57</sup>

In order to address these potential harms related to the existing public disclosure rule, the Commission proposes “to prohibit SASs from disclosing publicly CBSD registration information

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<sup>53</sup> See, *e.g.*, CTIA Comments at 11; Ericsson Comments at 6; T-Mobile Comments at 13; AT&T Comments at 12; Verizon Comments at 16; Alaska Communications Comments at 8.

<sup>54</sup> Verizon Comments at 16.

<sup>55</sup> CTIA Comments at 11-12 (specifically noting the Commission’s approach “regarding the locations of Wi-Fi access points and Bluetooth beacons in the National Emergency Address Database”).

<sup>56</sup> *Id.* at 12; see Ericsson Comments at 6-7 (“Disclosure of radio configuration and location are two examples of data that could harm commercial interests by indicating the licensee’s strategies – both in terms of the planned use of the spectrum and the particular customers that are being targeted.”).

<sup>57</sup> CTIA Comments at 12.

that may compromise the security of critical network deployments or be considered competitively sensitive.”<sup>58</sup> USCC, however, agrees with T-Mobile that, while the Commission’s “proposal is a step in the right direction, it will not sufficiently protect carrier networks.”<sup>59</sup> Instead, USCC continues to believe that the better, and simpler, approach would be for the Commission to outright prohibit the public disclosure of CBSD registration information.

Notably, while an outright prohibition would assure better protection for competitively sensitive and security-related information, it would in no way negatively impact the three-tiered sharing framework or prevent GAA and PAL users from planning deployments. As T-Mobile explained, “SAS Administrators are already required to work with each other to coordinate frequency assignments and avoid interference between CBSDs, and potential GAA users can work directly with SAS Administrators to determine where they can deploy CBSDs on a GAA basis.”<sup>60</sup> In sum, given that the public disclosure of CBSD registration information “does not serve any useful purpose, while the harms are demonstrable,”<sup>61</sup> USCC urges the Commission to prohibit SAS Administrators from publicly disclosing any CBSD registration information.

## **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.

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<sup>58</sup> *NPRM*, 32 FCC Rcd at 8085.

<sup>59</sup> T-Mobile Comments at 13.

<sup>60</sup> *Id.*

<sup>61</sup> Ericsson Comments at 6.

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