

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Promoting Investment in the)	GN Docket No. 17-258
3550-3700 MHz Band;)	
)	FCC 17-134
Petitions for Rulemaking Regarding the)	
Citizens Broadband Radio Service)	

COMMENTS OF VANTAGE POINT SOLUTIONS, INC.

VANTAGE POINT SOLUTIONS, INC.

Larry Thompson, P.E., CEO
Brian Bell, P.E., Senior Engineering Staff
2211 N. Minnesota St.
Mitchell, SD 57301
(605) 995-1777

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SUMMARY

Vantage Point Solutions, Inc. (“VPS”) files these comments in response to the Federal Communications Commission (“FCC” or “Commission”) Notice of Proposed Rulemaking in which the Commission seeks comment on several contemplated changes to the rules governing Priority Access Licenses (“PALs”) that will be issued in 3550-3700 MHz band (“3.5 GHz Band”). Among the many proposed changes for which comment is being sought, the Commission’s contemplated rulemaking particularly to enlarge PAL geographic license areas to Partial Economic Areas (“PEAs”), to impose build-out requirements, and/or to enlarge the 40 MHz spectrum aggregation limit, will serve to limit and even preclude access to PAL licenses by small and rural providers. Especially since these contemplated changes on their own will have comparatively little impact on investment interest among the more pressing concerns raised by the major, nationwide carrier petitioners¹ such as short license terms and lack of renewability, they should be abandoned so as not to stifle participation by small and rural providers, as mandated by Congress. Further, licensee access to Citizens Broadband Service Device (“CBSD”) registration information is crucial for network planning, has not been harmful in the past, and should not be limited.

¹ T-Mobile USA, Inc., Petition for Rulemaking, GN Docket No. 12-354, RM-11789, filed June 19, 2017; CTIA, Petition for Rulemaking, GN Docket No. 12-354, RM-11788, filed June 16, 2017; (“Petitioners”).

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To: The Commission

COMMENTS OF VANTAGE POINT SOLUTIONS, INC.

Vantage Point Solutions, Inc.² (“VPS”) files these comments in response to the Federal Communications Commission (“FCC” or “Commission”) Notice of Proposed Rulemaking³ in which the Commission seeks 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) – including longer license terms, renewability, larger geographic license areas, and auction methodology. VPS welcomes the opportunity to submit comments particularly on the proposed changes to PAL licensing – access to which is of significant concern to providers of rural telecommunications service and a large cross-section of our clientele.

² Vantage Point Solutions, Inc. is a nationwide provider of consulting and engineering services, including wireless consulting and engineering services, to approximately one third of the rural, independent telecommunications providers in the U.S., as well as to rural municipal and utility broadband providers. Many VPS clients today provide or plan to provide broadband service via fixed wireless to their service areas and communities. VPS CEO Larry Thompson, P.E., serves on the FCC’s Broadband Development Advisory Committee (“BDAC”).

³ GN Docket No. 17–258; FCC 17–134 *Promoting Investment in the 3550-3700 MHz Band, Proposed rule* (the “NPRM”).

I. THE COMMISSION SHOULD NOT ENLARGE PAL LICENSING TO A PEA BASIS OR IMPOSE STRINGENT BUILD-OUT REQUIREMENTS

Adjusting PAL licensing to a PEA-basis would hinder significantly the ability of existing small and rural providers, as well as new providers contemplating entering and innovating in this arena, to prevail or even participate in auctions of these licenses. The resulting limiting of the potential bidder pool to a small number of larger providers, such as the Petitioners, would be highly detrimental to the competitive landscape within rural areas, which historically have been underserved by many of these same providers. The result will be the preclusion of competitive, entrepreneurial and innovative uses of the PAL spectrum by prospective new small providers, as well as by small and rural providers that historically have been heavily vested in these rural areas, many under the Commissions existing CBRS (Part 90) licensing scheme, particularly if the Commission proceeds with attaching stringent buildout requirements to them. This result would contradict the mandate of section 309(j)(3)(C) of the Communications Act of 1934 (“the Act”), as amended, in which Congress directs the FCC to “prescribe area designations and bandwidth assignments that promote (i) an equitable distribution of licenses and services among geographic areas, (ii) economic opportunity for a wide variety of applicants, including small business, rural telephone companies, and businesses owned by members of minority groups and women, and (iii) investment in and rapid deployment of new technologies and services.”⁴ Rural providers are targeting PALs for overbuilding their existing network footprints with higher-performance spectrum/technology, and/or for expanding them. Smaller provider service areas typically are significantly smaller than PEAs, which predominantly include multiple counties and cover

⁴ 47 U.S.C. §§ 309(j)(3)(B)(C)

populations of tens of thousands.⁵ Especially if the Commission attaches stringent buildout requirements to PAL licenses, this would require a buildout on a scale significantly larger than smaller, rural entities can manage operationally or financially, thus precluding their competitive, entrepreneurial and innovative use of the spectrum, and foreclosing the intent of the Act.

Further, as the “small cell” nature of 5G will require a far more granular approach than the traditional “macro cell” approaches employed under legacy licensing, the notion that “a larger [PEA] license area would provide additional flexibility to facilitate the deployment of a wide variety of technologies, including 5G,” about which the Commission has sought comment,⁶ is counterintuitive. It also is unreasonable to expect that small operators that may wish to – and which may only have the wherewithal to – innovate in a “small cell” arena such as a Census Tract license, could do so on a comparatively enormous PEA basis.

Also, the administrative effort required for the initially proposed approach of licensing PALs on the Census Tract geographic basis would be of minimal concern to the major carriers, which are well-funded compared to small rural carriers, and will have little problem acquiring and aggregating the PALs they desire to serve large areas. Thus, it should have comparatively little impact on investment interest compared to their more pressing concerns, such as short license terms and lack of renewability. Meanwhile, their claim of increased administrative burden for the SASs and for the FCC as reasoning for PEA geographic sizing also is of inconsequential merit. The current geographic area licensing scheme will not pose an undue burden according to very

⁵ <https://www.federalregister.gov/documents/2014/09/04/2014-21007/wireless-telecommunications-bureau-provides-details-about-partial-economic-areas>

⁶ NPRM para. 23.

capable SAS Administrator applicants,⁷ and precludes no one. Therefore, while only somewhat larger license areas such as counties, as suggested by NTCA and Charter,⁸ might be a reasonable compromise for a portion of the PALs, a PEA basis for all PALs, which will stifle participation by small and rural providers, is especially unfair and should be abandoned if only modest administrative consideration is the reasoning.

II. THE COMMISSION SHOULD NOT ENLARGE THE 40 MHZ SPECTRUM AGGREGATION LIMIT

The Commission also should not enlarge the 40 MHz aggregation limit.⁹ With no more than seven 10 MHz PAL licenses available within a given market, doing so would facilitate total control of the available PAL spectrum by a small number of larger providers, and thus, again, would preclude the competitive, entrepreneurial and innovative uses of the PAL spectrum by small and rural providers. Further, larger carriers' motivation to use this "innovation band"¹⁰ spectrum most efficiently and expeditiously thusly will be removed. And thus, the Commission's goals to "create incentives for investment, encourage efficient spectrum use, support a variety of different use cases, and promote robust network deployments in both urban *and rural* communities"¹¹ will not be achieved. Keeping the current 40 MHz limit, however, will provide for competitive markets, by allowing others to enter those markets through the ability to obtain PAL licenses and the protections and opportunities for innovation that they offer.

⁷ As the Commission pointed out in the NPRM at para.21, companies "including Google and Sony, which have applied to be SAS Administrators—argue that managing licenses in over 70,000 geographic areas would not pose an undue burden 'given the meaningful advances in database management, cloud computing, and other technologies and engineering systems in recent years.'"

⁸ NPRM para.22.

⁹ NPRM para. 27.

¹⁰ NPRM para.2.

¹¹ *Id.* (emphasis added)

Concerning comments sought by the Commission on “changes to the technical rules that could facilitate operations over wider bandwidths,”¹² a limit of 40 MHz of PAL licensing is already consistent with the technical aspects of LTE networks in particular, and needs no further adjustment. This is due to the technical specifications ratified by the LTE standards body, Third Generation Partnership Program (“3GPP”), which dictate a maximum contiguous channel bandwidth of 20 MHz, and also prescribe a maximum aggregated bandwidth of 40 MHz for intra-band contiguous carrier aggregation within 3GPP band class 48C, which covers the 3550-3700 MHz band.¹³

The push for increasing the 40 MHz limit has the appearance of being based on the notion that PAL auction winners will be assigned two contiguous 10 MHz channel licenses, and that these licensed blocks won’t be subjected to being redistributed. However, even if all 70 MHz of PAL spectrum was permitted to be licensed to a single provider in a market, due to the necessary flexibility of the SAS providers to reassign a PAL operation’s channel at any time as required to protect Incumbent users, there are no guarantees that a PAL auction winner will be assigned two contiguous channels, much less two pairs of two contiguous channels. While enlarging the 40 MHz aggregation limit might improve the probability of being assigned pairs of contiguous channels, this would be at the expense of the potential monopolization of all PAL spectrum by a single licensee, and thus, again, would preclude the competitive, entrepreneurial and innovative uses of the PAL spectrum by small and rural providers.

Further, the nature of 3GPP-specified LTE carrier aggregation will contribute to grossly inefficient use of the spectrum if all 70 MHz of PAL spectrum is permitted to be obtainable

¹² NPRM para.1.

¹³ 3GPP.org TS36.101, Release 15, available at http://www.3gpp.org/ftp/Specs/latest/Rel-15/36_series/

by a single licensee with the expectation of it being usable for carrier aggregation. Within its technical specifications, 3GPP specifies necessary nominal channel separations for carrier aggregation, in order to maintain proper operation of the eNode Bs (base stations). The required channel separation is a function of the Component Carrier (“CC”)¹⁴ channel bandwidths utilized. Considering the absolute best-case, where two 20 MHz-wide CCs, each consisting of two contiguous 10 MHz channels, are to be aggregated, a nominal channel separation of 20 MHz will be required; resulting in a minimum of 60 MHz of the allocated 70 MHz PAL spectrum being necessary for this deployment scenario – with one third of it (20 MHz) being unusable by any single licensee that was permitted to obtain it under a premise of it facilitating carrier aggregation. Similarly, considering a pair of contiguous 10 MHz blocks forming a single 20 MHz CC, to be aggregated with only one noncontiguous 10 MHz block, the specified nominal channel separation required is still 14.5 MHz. If a single operator is permitted to obtain more than 40 MHz of PAL spectrum under a premise of facilitating carrier aggregation, in this case five 10 MHz channels would be required, not three, with 40% of it (20 MHz) being unusable by the licensee. And even while it would seem that aggregating a 20 MHz CC with two 10 MHz CCs and their required 14.5 MHz channel separations would be at least conceivable within all of the 70 MHz PAL spectrum, albeit still wasting over 40% of it (minimum 29 MHz), it would not be feasible in practice due to the 10 MHz-wide PAL licensing scheme and associated SAS operations, which would require two complete 10 MHz channels to accommodate each of the required 14.5 MHz channel separations, amounting to an 80 MHz requirement total. As shown in these examples, therefore, based on the 3GPP technical specifications, the most PAL spectrum that any provider could utilize for actual

¹⁴ 3GPP defines Component Carrier as the aggregated carrier; for example, two 10 MHz wide channels aggregated to form a single 20 MHz-wide Component Carrier.

traffic with LTE carrier aggregation is 40 MHz, with the balance wasted if it was allowed to be obtained by a single operator under a premise of facilitating LTE carrier aggregation. Thus, allowing one licensee to control all seven PALs under the guise of accommodating LTE carrier aggregation would be a grossly inefficient use of the PAL spectrum. At the expense of the possibility at times of there being no contiguous channels or properly aligning channel separations assigned across the seven 10 MHz PAL licenses within the 40 MHz aggregation limit, the otherwise gross waste of spectrum from allowing more than 40 MHz of PAL spectrum to be aggregated for the sake of LTE carrier aggregation, would be better made available to other licensees.

Some might argue that more than 40 MHz is necessary to accommodate 3GPP's emerging 5G "New Radio" ("NR") technical specification and its larger channel bandwidth utilizations. However, the NR technical specifications continue to accommodate 10 MHz, 20 MHz and 40 MHz channel bandwidths for the NR band classes supporting the 3.5 GHz Band spectrum. While enlarging the 40 MHz aggregation limit may permit larger NR channel bandwidths, this, again, would be at the expense of the potential monopolization of all PAL spectrum by a single licensee in any given market, and thus, again, would preclude the competitive, entrepreneurial and innovative uses of the PAL spectrum by small and rural providers. Maintaining the 40 MHz aggregation limit, therefore, remains appropriate even for emerging 5G specifications, as well as for current 4G LTE specifications, while maintaining consistency with the Commission's goals to "create incentives for investment, encourage efficient spectrum use, support a variety of different use cases, and promote robust network deployments in both urban *and rural* communities."¹⁵

¹⁵ *Id.* [10]

III. THE COMMISSION SHOULD NOT LIMIT LICENSEE ACCESS TO CITIZENS BROADBAND SERVICE DEVICE (“CBSD”) REGISTRATION INFORMATION

The Commission also has requested comments regarding how to balance appropriately the licensees’ potential needs for information about CBSD deployments with the potential competitive and security risks.¹⁶ Having access to CBSD registration information historically has been crucial to the planning and implementation processes of existing 3650-3700 MHz (Part 90) operations, and will remain so in the planning process for Part 96 CBRS operations. Part 90 licensees have utilized base station information publicly available through the ULS for initial planning processes, and for the subsequent coordination efforts that have made Part 90 operations successful. As the Commission requires GAA users per §96.35 to continue these coordination efforts in the transition to Part 96 operations, technical CBSD registration information will need to remain publicly available, either directly from the SAS providers, or preferably through the ULS. While there may be other information besides the identities of the licensees that could be obfuscated by the SASs to protect “the concerns raised by commenters about disclosure of confidential business information to the public,”¹⁷ the following anonymized CBSD site information should remain publicly available, at the minimum, so that providers can investigate the feasibility of GAA or PAL service prior to attempting to reserve or acquire spectrum at auction: geographic coordinates; antenna centerline elevation; base station make/model; antenna make/model/gain; and, EIRP.

Making transmitter site information publicly available is nothing new to the wireless industry. Starting with cellular licensing, throughout Part 90 licensing and continuing through the

¹⁶ NPRM para.37.

¹⁷ NPRM para.33.

most recent Lower 700 MHz buildout filings, wireless providers have been required to post the geographic coordinate information for their operating base stations at a minimum, with no detrimental impact to the competitive landscape. Therefore, the Commission should not further consider limiting access to CBSD registration information.

IV. CONCLUSION

The Commission's contemplated rulemaking particularly to enlarge PAL geographic license areas to Partial Economic Areas ("PEAs"), to impose build-out requirements, and/or to enlarge the 40 MHz spectrum aggregation limit, will serve to limit and even preclude access to PAL licenses by small and rural providers, as well as the competitive, entrepreneurial and innovative uses of the PAL spectrum by those providers. Together or severally, such changes would contradict the mandate of section 309(j)(3)(C) of the Communications Act of 1934, as well as the Commission's goals to "create incentives for investment, encourage efficient spectrum use, support a variety of different use cases, and promote robust network deployments in both urban *and rural* communities," and should be abandoned. Also, licensee access to Citizens Broadband Service Device ("CBSD") registration information is crucial for network planning and should not be limited.

Respectively submitted,

VANTAGE POINT SOLUTIONS, INC.

By: Larry Thompson, P.E., CEO
Brian Bell, P.E., Senior Engineering Staff

Vantage Point Solutions, Inc.
2211 North Minnesota St.
Mitchell, SD 57301
Tel. (605) 995-1777

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