

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

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

REPLY COMMENTS OF T-MOBILE USA, INC.

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December 20, 2013

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T-Mobile USA, Inc. (“T-Mobile”)^{1/} submits these reply comments in response to the November 1, 2013, Public Notice issued by the Commission and the comments submitted by other parties in the above-referenced proceeding regarding an alternative licensing framework (“Revised Framework”) for the use of 3550-3650 MHz band (“3.5 GHz Band”).^{2/} The record in this proceeding demonstrates broad support for the Revised Framework and shows that, with adjustments, the Revised Framework can be implemented in a manner that provides the necessary regulatory certainty for entities seeking to invest in this spectrum. Accordingly, T-Mobile urges the Commission to adopt the proposals outlined below in order to ensure that the full potential of the 3.5 GHz Band is maximized for small cell and other technologies.

I. INTRODUCTION AND SUMMARY

In its comments, T-Mobile expressed support for the Revised Framework in general and the FCC’s proposal to expand eligibility for Priority Access Licenses (“PALs”) to include a

^{1/} T-Mobile USA, Inc. is a wholly-owned subsidiary of T-Mobile US, Inc., a publicly traded company.

^{2/} See *Commission Seeks Comment on Licensing Models and Technical Requirements in the 3550-3650 MHz Band*, Public Notice, GN Docket No. 12-354, FCC 13-144 (rel. Nov. 1, 2013) (“*Public Notice*”). The Revised Framework builds upon the licensing and technical proposals in the FCC’s 2012 Notice of Proposed Rulemaking in this proceeding. See *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Notice of Proposed Rulemaking, 12 FCC Rcd 15594 (2012) (“*NPRM*”).

broad range of users in particular.^{3/} In order to further enhance the Revised Framework, T-Mobile suggested that PALs should be made available for terms greater than one year,^{4/} that they should be issued using geographic areas larger than census tracts,^{5/} and that, in exchange for those greater spectrum rights, PAL holders should be subject to build-out requirements and be afforded a renewal expectancy.^{6/} T-Mobile also recommended that the FCC limit the role of the Spectrum Access System (“SAS”) to identifying when spectrum is available for use by either a PAL licensee or General Authorized Access (“GAA”) devices, rather than allowing the SAS to dynamically assign frequencies or control or modify the technical or operational parameters of a PAL network.^{7/} Finally, T-Mobile advocated including the entire 150 megahertz of the 3550-3700 MHz band in the FCC’s Revised Framework.^{8/}

Commenters widely agree that the Revised Framework presents substantial improvements to the licensing scheme for the 3.5 GHz Band by, among other things, opening up the Priority Access tier. Commenters also join T-Mobile in suggesting that this framework can be further improved to provide additional certainty to 3.5 GHz Band users and provide an incentive to investment. In particular, commenting parties support making PALs available on a multi-year basis, across large geographic areas, with a renewal expectancy, and flexible technical rules with minimal control by the SAS to accommodate the wide variety of applications

^{3/} See Comments of T-Mobile USA, Inc., GN Docket No. 12-354, at 2, 4 (filed Dec. 5, 2013) (“T-Mobile Comments”).

^{4/} See *id.* at 5-6.

^{5/} See *id.* at 6-7.

^{6/} See *id.* at 8.

^{7/} See *id.* at 10-12, 13-14.

^{8/} See *id.* at 14.

anticipated in the 3.5 GHz Band. T-Mobile is pleased to have the opportunity to submit these reply comments to highlight the consensus reached by the parties in this proceeding.

II. THERE IS WIDE SUPPORT FOR BROADLY EXPANDING ELIGIBILITY FOR THE PRIORITY ACCESS TIER

The majority of commenters agree with T-Mobile that the Priority Access tier should be expanded to allow any prospective licensee who meets basic FCC qualifications to be eligible to apply for a PAL.^{9/} As T-Mobile explained, many entities besides mission critical users require access to quality assured spectrum that PALs provide.^{10/} Indeed, as the Consumer Electronics Association points out, “[c]ommercial operations benefit from reliable, prioritized access to spectrum and a predictable quality of service, which will support investment and innovation in the 3.5 GHz band.”^{11/} PCIA-The Wireless Infrastructure Association & The HetNet Forum (“PCIA”) similarly recognizes that “[c]ommercial wireless providers are, today, providing a high level of service across industries, including those with critical quality-of-service needs”, and thus

^{9/} See, e.g., Comments of AT&T, GN Docket No. 12-354, at 3 (filed Dec. 5, 2013) (“AT&T Comments”) (urging the FCC “to open the priority access tier to any applicant meeting the basic licensee qualifications”); Comments of Alcatel-Lucent, GN Docket No. 12-354, at 2 (filed Dec. 5, 2013) (“Alcatel-Lucent Comments”) (“We continue to believe that open eligibility to bid for Priority Access would best serve the public interest. As Alcatel-Lucent advocated in its initial Comments, *any* class of user that demands access to spectrum with guaranteed quality of service, high reliability and availability should be eligible to obtain such access.”); Comments of Nokia Solutions and Networks US LLC, GN Docket No. 12-354, at 4 (filed Dec. 5, 2013) (“NSN Comments”) (agreeing that “a wide class of users should be able to gain as unfettered access as possible to this spectrum”); Comments of Spectrum Bridge, Inc., GN Docket No. 12-354, at 2 (filed Dec. 2, 2013) (“SBI Comments”) (“SBI strongly supports the shift to allow a broader class of PA (Priority Access) users.”).

^{10/} See T-Mobile Comments at 4.

^{11/} Comments of the Consumer Electronics Association, GN Docket No. 12-354, at 3 (filed Dec. 5, 2013); see also Comments of Google Inc. on the Proposed Revised Framework, GN Docket No. 12-354, at 5 (filed Dec. 5, 2013) (“Google Comments”) (“Opening the Priority Access tier will encourage deployment of systems that require reliable access to spectrum to deliver a higher quality of service.”).

cautions that “[l]imiting the Priority Access tier to a specific class of industry or service provider would be inefficient.”^{12/}

Only two parties – the Utilities Telecom Council (“UTC”) and Microsoft Corp. (“Microsoft”) – suggest that the Priority Access tier should be limited to mission critical services.^{13/} As T-Mobile suggested and others agree, there is no need for special rules for critical access facilities such as hospitals seeking to obtain Priority Access tier PALs.^{14/} Indeed, no critical access facilities even submitted comments requesting special treatment. While T-Mobile appreciates the important services that critical access facilities provide, those users could still have access to the GAA tier and could be provided Priority Access-like protections within the confines of their facilities through the SAS. They could also secure protected access to the 3.5 GHz Band through agreements with PAL holders.

^{12/} Comments of PCIA – The Wireless Infrastructure Association and The HetNet Forum, a Membership Section of PCIA, GN Docket No. 12-354, at 3 (filed Dec. 5, 2013) (“PCIA Comments”).

^{13/} See Comments of the Utilities Telecom Council, GN Docket No. 12-354, at 3-4 (filed Dec. 5, 2013); Comments of Microsoft Corporation, GN Docket No. 12-354, at 6 (filed Dec. 5, 2013) (“Microsoft Comments”) (“Microsoft continues to believe there is merit in the Commission’s original conclusion in the NPRM that the Priority Access tier should be limited to mission critical users.”).

^{14/} See T-Mobile Comments at 12-13; *see also* Comments of the Satellite Industry Association on Licensing Models and Technical Requirements in the 3550-3650 MHz Band, GN Docket No. 12-354, at 6 (filed Dec. 5, 2013) (“SIA Comments”) (“SIA opposes permitting localized critical access use within the 150-km areas surrounding primary FSS earth stations.”); Comments of Ericsson in Response to the Public Notice, GN Docket No. 12-354, at 5 (filed Dec. 5, 2013) (“Ericsson Comments”) (asserting that allowing critical users to receive interference protections within a limited portion of the GAA pool inside their facilities could translate into higher demands on opportunistic access for the PA tier, thereby reducing the spectrum available to PALs and fragmenting the equipment market).

III. COMMENTERS AGREE THAT PRIORITY ACCESS LICENSES MUST BE ISSUED IN A MANNER THAT PROVIDES CERTAINTY AND ENCOURAGES INVESTMENT

A. PALs Must Be Issued for Multiple-Year Terms and Be Afforded a Renewal Expectancy.

T-Mobile previously pointed out that the FCC must issue PALs on a multi-year basis, similar to the 10-year licenses commonly issued in other wireless services, because licensees will generally not invest in infrastructure if they can only use it for one year without the assurance that they can continue to do so.^{15/} Although commenting parties disagree on the exact term of PALs, they agree with T-Mobile that the term must be longer than one year to encourage network investment. For instance, Nokia Solutions and Networks US LLC (“NSN”) explains that “a one year term will be insufficient to provide the predictability and certainty needed for [Mobile Network Operators] and other potential [Priority Access] users of the spectrum to make investments in the band” and thus recommends that the FCC consider, at a minimum, making PALs available for 10-year terms.^{16/} While Google recommends that the Commission establish a two-year term for a licensee’s initial PAL,^{17/} and Alcatel-Lucent proposes that the Commission offer both one-year and five-year stackable PALs,^{18/} both parties recognize that longer license terms are necessary to allow for build-out, which typically takes two years, and to spur

^{15/} See T-Mobile Comments at 5-6.

^{16/} NSN Comments at 4-5 (adding that “[e]ven if the Commission ultimately views 10 years as too long, NSN believes that terms significantly more than a single year are warranted”); *see also* Comments of Qualcomm Incorporated on 3.5 GHz Licensing Public Notice, GN Docket No. 12-354, at 8 (filed Dec. 5, 2013) (“Qualcomm Comments”) (stating that “[t]he FCC should stick with well-established and proven licensing models in the 3.5 GHz band because mobile broadband operators desperately need to incorporate this spectrum into their networks in order to continuing meeting consumers’ exponentially increasing data demands”); Ericsson Comments at 7-8.

^{17/} See Google Comments at 9.

^{18/} See Alcatel-Lucent Comments at 2-5.

investment.^{19/} Even Motorola Solutions, Inc. (“MSI”), the only party suggesting PAL terms of less than one year,^{20/} recognizes that PAL licensees should be permitted to aggregate license terms for up to two years.

In addition, commenters agree that PAL licensees should be entitled to a renewal expectancy. As T-Mobile explained, “[i]n order for licensees to invest in 3.5 GHz Band equipment, they must be provided with regulatory certainty that they can continue to operate under their existing licenses over the long term.”^{21/} AT&T agrees, pointing out that without a renewal expectancy, there will be uncertainty as to whether a licensee will continue to have access to the spectrum it uses to serve its customers after its term is over, which will deter innovation and investment in the band.^{22/} PAL licensees that meet their build-out requirements should therefore, as T-Mobile and other suggest, be able to expect to renew their authorizations.^{23/} While some parties oppose construction requirements and renewal rights,^{24/} as Google notes, “[b]asing renewal rights on actual use . . . will provide licensees with sufficient

^{19/} See Alcatel-Lucent Comments at 2-5; Google Comments at 9.

^{20/} See Comments of Motorola Solutions, Inc., GN Docket No. 12-354, at 7 (filed Dec. 5, 2013) (“MSI Comments”) (“Motorola Solutions recommends that the nominal PAL licensing term be reduced to quarterly, with consecutive reservations being permitted up to two years.”).

^{21/} T-Mobile Comments at 8.

^{22/} See AT&T Comments at 4-5; *see also* Google Comments at 8 (asserting that the Commission can better ensure efficient use of the 3.5 GHz Band “by issuing licenses with a renewal expectancy limited to those portions of the spectrum that the licensee actually uses, as recorded in an SAS”); Qualcomm Comments at 8.

^{23/} See T-Mobile Comments at 5-6; AT&T Comments at 5 (suggesting that PAL licensees be required “to commit to deploy equipment and to be providing service in the applicable geographic area by the end of the first PAL year”).

^{24/} See Comments of the Wireless Internet Service Providers Association, GN Docket No. 12-354, at 13 (filed Dec. 5, 2013) (“WISPA Comments”) (agreeing with the FCC’s proposal to award PALs with non-renewable terms and arguing that “[p]arties should be able to apply for multiple terms, so long as the Commission does not impose build-out rules and the SAS allows GAA use when PALs are not actually in use”); SBI Comments at 5 (“We agree that enforcing construction or service requirements across 74,000 or more license areas with potentially, multiple licensees in each area is impractical.”).

certainty to make longer-term network investments, while ensuring that other users can compete for the spectrum if the licensee fails to deploy a network.”^{25/}

B. PALs Should Be Licensed Using Larger Geographic Areas.

Commenters also agree with T-Mobile that PALs should be licensed using areas larger than census tracts, primarily for two reasons.^{26/} First, commenters recognize that licensing PALs using census tracts would create instability. For instance, Alcatel-Lucent notes that census tract data varies every ten years and could potentially disadvantage PAL licensees when those borders shift.^{27/} PCIA likewise questions whether “a licensing framework tied to a fluid set of over 74,000 census tracts may prove challenging as populations shift.”^{28/} Second, commenting parties agree with T-Mobile that issuing PALs on a census tract basis would be administratively burdensome, requiring licensees to evaluate volumes of information to determine which licenses will best suit their business needs.^{29/} As Verizon explains, “[t]he proposal to assign 74,000 PALs on a Census tract basis would create substantial administration burdens, and it would be challenging for wireless operators and the SAS managers to address the various border interference issues that can be expected to emerge.”^{30/}

^{25/} Google Comments at 9.

^{26/} See T-Mobile Comments at 6-7; NSN Comments at 5 (“[W]e support using license areas that are larger than census tracts, even if census tracts can be aggregated into larger areas.”); Qualcomm Comments at 7.

^{27/} See Alcatel-Lucent Comments at 5.

^{28/} PCIA Comments at 4.

^{29/} See T-Mobile Comments at 6.

^{30/} Supplemental Comments of Verizon and Verizon Wireless, GN Docket No. 12-354, at 7 (filed Dec. 5, 2013) (“Verizon Comments”); see also Alcatel-Lucent Comments at 5 (arguing that “serving throughout just one metropolitan area would pose an administrative licensing challenge”).

Some parties suggest that PALs should be issued using geographic areas even smaller than census tracts.^{31/} Microsoft, for example, argues that PALs should be issued based on “census block groups,” which generally contain between 600 and 3,000 people versus the 4,000 residents covered by census tracts.^{32/} MSI goes even further by contending that “the geographic area that PALs cover should be reduced to as small as an area as possible (e.g., 100 x 100 meter geographic tiles).”^{33/} These assertions should be rejected. The instability and administrative issues presented above would only be exacerbated if PALs were licensed using the smaller areas that these parties suggest.

In addition, the availability of PAL authorizations only for smaller geographic areas assumes only one type of use of the 3.5 GHz Band – very small cell base operations. However, as discussed below, the 3.5 GHz Band may be used for different applications, including for carriers’ backhaul needs, which would require point-to-point configurations and a larger protection area to cover both ends of a link. Use of the 3.5 GHz Band over a larger geographic area would afford licensees the flexibility to use the spectrum dynamically as circumstances dictate – for small cells on some occasions and for point-to-point operations on others. Similarly, smaller geographic areas will also make it difficult for licensees to hold the same spectrum across a broad geographic area, defeating the potential for beneficial spectrum planning that features frequency re-use.

^{31/} The Satellite Industry Association also suggests that PALs should not be issued where primary Fixed Satellite Service operations would be adversely affected. *See* SIA Comments at 3-5. However, this argument, as specifically recognized by the FCC, is beyond the scope of the Public Notice. *See Public Notice* ¶ 3. T-Mobile will be pleased to address this matter further at the appropriate time.

^{32/} *See* Microsoft Comments at 6-7.

^{33/} MSI Comments at 9.

IV. THE TECHNICAL RULES FOR THE 3.5 GHz BAND SHOULD PROVIDE FLEXIBILITY TO ACCOMMODATE A VARIETY OF APPLICATIONS

Like T-Mobile, commenters recognize that the 3.5 GHz Band will be used for a variety of applications.^{34/} BLiNQ Networks Inc. (“BLiNQ”), for example, explains that small cells cannot exist without small cell backhaul and thus suggests that the FCC’s technical rules should be flexible enough to create additional opportunities for non-line-of-sight (“NLOS”) backhaul in the 3.5 GHz Band.^{35/} Verizon similarly suggests that the FCC’s technical specifications should support “additional important use cases for which 3.5 GHz spectrum is attractive,” including outdoor wide area coverage “base station” uses (commensurate with wide area sectorized small cell microcells) and outdoor point-to-point narrow-beam use cases (commensurate with point-to-point backhaul uses).^{36/} The Wireless Internet Service Providers Association adds that the FCC’s rules “*must* accommodate backhaul and point-to-multipoint operations.”^{37/}

In order to make the most intense use of the 3.5 GHz Band, the FCC’s technical rules, including power limits, should therefore be flexible to accommodate these various applications. As T-Mobile proposed, the Commission should adopt a maximum transmit power for Priority Access licensees of 37 dBm (5 watts), which will maximize the 3.5 GHz Band for small cell use, and limit GAA users, who will presumably seek to use spectrum on a more opportunistic, localized basis, to a transmit power of 24 dBm.^{38/} CommScope agrees that small cell operations

^{34/} See T-Mobile Comments at 11 (reiterating that “the 3.5 GHz Band may be used for, among other purposes, backhaul and small-cell base station operations”); Alcatel-Lucent Comments at 7 (reiterating that the 3.5 GHz Band should “be made available for a wide array of uses including access to mobile broadband, fixed wireless access, and non-line of sight backhaul”).

^{35/} See Comments of BLiNQ Networks, Inc., GN Docket No. 12-354, at 1-2, 5-8 (filed Dec. 5, 2013).

^{36/} See Verizon Comments at 11-12.

^{37/} WISPA Comments at 10.

^{38/} See T-Mobile Comments at 13-14.

in the 3.5 GHz Band “should be allowed to use up to 37dBm EIRP (5W) . . . to achieve reasonably good coverage in a dense urban area (for example, outdoor small cell deployment on the street), due to the significantly higher path loss associated with the 3.5 GHz Band.”^{39/}

BLiNQ recognizes that different power limits may be appropriate for other applications. It suggests that licensees should be permitted to operate “at power limits of up to a maximum EIRP of 43 dBm, or a maximum transmit power of 30 dBm and a maximum of antenna gain of 13 dBi” to help enable NLOS backhaul and other important use cases. T-Mobile agrees that the power level it recommends is most appropriate for small cell operation and that the Commission should develop technical rules that are appropriate for the other contemplated uses of the 3.5 GHz Band.^{40/}

V. THE ROLE OF THE SAS SHOULD BE LIMITED

A. The SAS Should Not Dynamically Assign Frequencies.

T-Mobile’s comments strongly opposed permitting the SAS to dynamically assign spectrum to Priority Access licensees due to the complications associated with instantaneously retuning equipment to newly assigned spectrum and the effect that such assignments would have on licensees’ spectrum planning activities.^{41/} For similar reasons, commenters agree that the SAS should not dynamically assign frequencies. AT&T, for instance, notes that small cell deployments may be integrated into heterogeneous networks, and “[a]llowing the SAS to change the spectrum assignments for such a PAL is likely to impair the ability of the licensee to manage

^{39/} Comments of CommScope, GN Docket No. 12-354, at 3 (filed Dec. 5, 2013).

^{40/} *See also* Comments of Motorola Mobility LLC, GN Docket No. 12-354, at 4 (filed Dec. 5, 2013) (“Motorola Mobility Comments”) (“The Commission should . . . adopt a band plan and technical rules that allow the greatest possible operational flexibility and support multiple mobile network technologies . . .”).

^{41/} *See* T-Mobile Comments at 10-11.

such an integrated network.”^{42/} AT&T thus, like T-Mobile, suggests that the role of the SAS should be limited to identifying when spectrum is available for use and that PALs should be associated with specific spectrum assignments.^{43/} This will allow licensees to know the exact spectral location of a given authorization and engage in sound spectrum planning. In contrast, SAS control of use of the spectrum will defeat PAL holders’ reasonable spectrum planning, including plans to aggregate continuous blocks of spectrum and license areas in order to make most efficient use of the band.

B. The SAS Should Not Control Other Parameters of Licensees’ Use of Priority Access Spectrum.

The SAS also should not control other parameters of licensees’ use of Priority Access spectrum. As stated in T-Mobile’s comments and discussed above, the 3.5 GHz Band will be used for various applications, requiring different power levels, interference protection criteria and other technical parameters.^{44/} Unless PAL holders are required to continually update the SAS with how they are using the spectrum – an unnecessary and intrusive obligation – the SAS will be unaware of precisely how the 3.5 GHz Band is used in an area and its use should therefore not be controlled by a third party. NSN agrees that in order to maximize efficient use of the 3.5 GHz Band, “[t]he external SAS should not configure and/or set limits on various radio parameters” and that “[t]his configuration should be left to the Priority Access users.”^{45/} NSN clarifies that the SAS should not configure network parameters because, among other reasons,

^{42/} AT&T Comments at 4.

^{43/} *Id.* at 4-5 (adding that “PALs issued to the same licensee in adjacent census tracts should be assigned the same 10 MHz blocks in contiguous license areas if it is at all possible to do so”); *see also* NSN Comments at 16 (asserting that “the SAS should only identify the available spectrum to authorize use in a particular location/frequency/time, perhaps enhanced with technical requirements such as the interference threshold that should not be exceeded in a given geographical area where the incumbent is operating”).

^{44/} *See* T-Mobile Comments at 11.

^{45/} NSN Comments at 16.

such a configuration process requires deep insights into PAL licensees' radio access networks, including business sensitive information; the Priority Access network operator must have control to optimize the traffic in its network; and there is a real danger of "mis-configuration" from an external entity like the SAS.^{46/} Because SAS control of system parameters will hamstring users' ability to dynamically decide the best use of the band for a variety of applications, the SAS should not be permitted to set or adjust a system's transmit power or other operating parameters.

VI. THERE IS BROAD SUPPORT FOR EXTENDING THE REVISED FRAMEWORK TO THE 3650-3700 MHz BAND

Finally, commenters join T-Mobile in urging the Commission to extend the Revised Framework to the 3650-3700 MHz band. Motorola Mobility LLC correctly recognizes that including the 3650-3700 MHz band within the proposed Revised Framework is consistent with the FCC's spectrum policies and will create 150 megahertz of contiguous spectrum to the benefit of consumers.^{47/} Specifically, the extended band will create economies of scale and a single, uniform equipment market, which will spur innovation, reduce equipment costs, and enable the development of multiple form factors for mobile devices.^{48/} Google also observes that "[m]ore contiguous spectrum can support more uses, attract more services, and encourage expansion of the equipment market – all of which will increase the intensity and diversity of 3.5 GHz operations."^{49/}

^{46/} See *id.* at 16-17.

^{47/} See Motorola Mobility Comments at 7-8; see also Verizon Comments at 4 ("The Commission should combine the 3.5 GHz band (3550-3650) with the 50 MHz of spectrum between 3650 and 3700 MHz, and thus make a total of 150 MHz of spectrum available for commercial use.").

^{48/} See Motorola Mobility Comments at 8.

^{49/} Google Comments at 13.

Some current users of the 3650-3700 MHz band have expressed concerns about this proposed extension, citing potential interference issues.^{50/} These concerns, however, are unfounded. Users of the 3650-3700 MHz band today have minimal protection against interference by co-channel operations.^{51/} If the new rules are extended to the 3650-3700 MHz band, these users will be able to continue to use the spectrum as GAA users and be protected by the SAS under the Revised Framework when they are using the spectrum. Moreover, inclusion of the 3650-3700 MHz band in the Revised Framework will not, as some commenters suggest, foreclose its use for current operations.^{52/} To the contrary, if the Commission adopts T-Mobile's and others' plans to allow a variety of applications, those incumbent users can continue to employ existing facilities, regardless of whether they are small cell or point-to-point operations. The benefits associated with creating additional contiguous spectrum under the Revised Framework will outweigh the perceived harms.

VII. CONCLUSION

The comments in this proceeding demonstrate overwhelming agreement that the Commission can and should take the actions discussed above to ensure that the Revised Framework provides clarity, promotes investment, and encourages the full exploitation and utilization of the 3.5 GHz Band.

^{50/} See Comments of Neptuno Networks, GN Docket No. 12-354, at 5 (filed Dec. 5, 2013) (“Neptuno Comments”) (expressing Neptuno’s concern that integrating the 3650-3700 MHz band into the Revised Framework would lead to, among other things, “interference and signal quality degradation,” due to the potential incompatibility of higher power operations with small cell deployments in constrained geographical spaces); see also Comments of KanOkla Communications, Inc., GN Docket No. 12-354, at 4-5 (filed Dec. 5, 2013) (arguing that the FCC’s Revised Framework could cause KanOkla to lose access to some of its spectrum).

^{51/} See generally 47 C.F.R. Part 90, Subpart Z.

^{52/} See Neptuno Comments at 3-4 (claiming that extension of the Revised Framework to the 3650-3700 MHz band would “cripple the ability of Neptuno and others to continue to operate and provide the service that it offers now”).

Respectfully submitted,

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