

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Amendment of the Commission's Rules with)	GN Docket No. 12-354
Regard to Commercial Operations in the 3550-)	
3650 MHz Band)	
)	
Petition for Rulemaking to Amend the)	RM-11788
Commission's Rules Regarding the Citizens)	
Broadband Radio Service in the 3550-3700 MHz)	
Band)	
)	
Petition for Rulemaking to Maximize)	RM-11789
Deployment of 5G Technologies in the Citizens)	
Broadband Radio Service)	

COMMENTS OF FEDERATED WIRELESS, INC.

Federated Wireless, Inc. ("Federated Wireless") offers these comments on the petitions for rulemaking filed in the above-captioned proceedings.¹ In particular, Federated Wireless urges the Federal Communications Commission ("Commission") to: (1) act to resolve pending petitions for rulemaking related to the Priority Access License ("PAL") tier of the Citizens Broadband Radio Service ("CBRS"), but expeditiously move forward with certifications for Spectrum Access System ("SAS") administrators and Environmental Sensing Capability ("ESC") operators by January 2018 so that General Authorized Access ("GAA") deployment and operations can commence while the Commission considers any appropriate rule changes for PAL spectrum; (2) summarily reject the request by T-Mobile USA, Inc. ("T-Mobile") to convert the CBRS into a traditional, exclusive licensing regime; and (3) seek comment on how to best balance the data security and privacy needs

¹ See CTIA, Petition for Rulemaking, GN Docket No. 12-354 (filed June 16, 2017) ("CTIA Petition"); T-Mobile USA, Inc., Petition for Rulemaking, GN Docket No. 12-354 (filed June 19, 2017) ("T-Mobile Petition"); *see also Wireless Telecommunications Bureau and Office of Engineering and Technology Seek Comment on Petitions for Rulemaking Regarding the Citizens Broadband Radio Service*, GN Docket No. 12-354, RM-11788, RM-11789, Public Notice, DA 17-609 (WTB 2017).

of CBRS users with the need to securely share certain information to maximize the efficiency of spectrum use.

I. IT IS PARAMOUNT THAT CONSIDERATION OF ANY POTENTIAL CHANGES TO THE CBRS RULES FOR PAL SPECTRUM NOT DELAY COMMERCIAL LAUNCH OF SERVICE ON GAA SPECTRUM, SQUANDERING SIGNIFICANT INDUSTRY MOMENTUM.

In their petitions, CTIA and T-Mobile request that the Commission make a number of changes to the existing CBRS rules related to Priority Access License (“PAL”) spectrum, including increasing the size of PAL license areas from census tracts to Partial Economic Areas, lengthening PAL terms from three to ten years, and adding a renewal expectancy to PALs.² T-Mobile and Qualcomm Incorporated (“Qualcomm”) additionally ask that the Commission relax the CBRS out-of-band emission (“OOBE”) limits.³

Federated Wireless supports the petitioners’ requests that the Commission consider these specific issues, and encourages the Commission to promptly seek comment on, and resolve, the CTIA petition for rulemaking and Qualcomm *ex parte* as they relate to the questions of license areas and license terms for PAL spectrum and OOBE limits for Citizens Broadband Service Devices (“CBSDs”). Federated wants to make clear, however, that there is ample industry support for the Commission moving ahead with all expedition to complete SAS and ESC certifications by January 2018, as planned,⁴ so that commercial service on GAA spectrum can be deployed in 2018 while the Commission considers changes for the PAL spectrum in parallel. Industry is anxious to begin using and testing the GAA spectrum, together with SAS and ESC technology, and there is no reason to

² CTIA Petition at 6-11; T-Mobile Petition at 11-13, 16-19.

³ T-Mobile Petition at 21-22; Letter from Dean R. Brenner, Senior Vice President, Spectrum Strategy & Technology Policy, and John W. Kuzin, Vice President and Regulatory Counsel, Qualcomm, Inc. to Marlene H. Dortch, Secretary, FCC, GN Docket No. 12-354 (filed June 19, 2017).

⁴ Formal testing to certify SAS products’ compliance with the Part 96 rules is scheduled to begin in mid-November 2017 and be complete by January 2018, with formal testing to certify ESC products beginning in mid-December 2017 and completing by late January 2018.

delay GAA operations while questions related to PAL spectrum and OOB limits are considered. Indeed, consideration of the T-Mobile and Qualcomm requests with respect to OOB limits can and should proceed in parallel with SAS and ESC certification, as OOB limits have no bearing on the certification and operation of the SAS. Further, as Qualcomm is seeking a relaxation of the OOB limits for CBSDs and end user devices there is no reason to delay the certification of devices that comply with the current OOB limits. Should the Commission decide to adopt the proposal, the devices that comply with the more stringent current limits will similarly comply with the newly adopted, less stringent OOB limits.

Following the adoption of the *3.5 GHz Order*,⁵ industry interest in, and momentum toward, the dense, widespread commercial use of the CBRS spectrum has continued to grow at a tremendous rate. Since its founding less than a year ago,⁶ the CBRS Alliance has seen its membership grow from the seven founding companies to more than 65 companies across the CBRS ecosystem, including wireless carriers, cable operators, wireless Internet Service Providers, device and equipment manufacturers, tower companies, and prospective SAS administrators and ESC operators.⁷ The Wireless Innovation Forum—a consensus group comprised of stakeholders across

⁵ *Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, GN Docket No. 12-354, Report and Order and Second Further Notice of Proposed Rulemaking, FCC 15-47 (2015) ("*3.5 GHz Order*").

⁶ See *Industry Leaders Launch Alliance to Drive Deployment of LTE-based Solutions for the US 3.5 GHz Citizens Broadband Radio Service*, BUSINESS WIRE (Aug. 23, 2016); available at <http://www.businesswire.com/news/home/20160823005517/en/Industry-Leaders-Launch-Alliance-Drive-Deployment-LTE-based>.

⁷ See CBRS Alliance, "Members," available at <https://www.cbrsalliance.org/>. Sponsor Members include: Access Technologies (Alphabet), Ericsson, Inc., Federated Wireless, Intel Corporation, Nokia, Qualcomm, and Ruckus Wireless; Full Members include: Airspan Networks, Alpha Wireless, American Tower Corporation, Askey Computer Corp., AT&T, Boingo Wireless, Cable Television Laboratories, Charter Communications, Cisco Systems, Comcast Corporation, CommScope, Crown Castle, CTIA, ExteNet Systems, Fujitsu Network Communications, Huawei Technologies USA, ip.access Limited, Ligado Networks, Mavenir, Mobilitie, Rise Broadband, Samsung, Seowonintech, SerComm USA, Sony Corporation, SpiderCloud Wireless, Sprint Corporation, Telrad Networks, T-Mobile USA, US Cellular, Verizon Communications, Vivint, and ZTE USA; Adopter Members include: Accelleran, ATN International, Baicells Technologies, Casa Systems, Contela, DAS Worldwide, DEKRA, Infomark, Juni, NetComm Wireless Limited, Nsight/Cellcom, PCTEL, QuadGen Wireless, QUCELL, Quortus, Radisys, Rivada Networks, SBA Communications, Sequans Communications, Shenzhen Gongjin Electronics, Syniverse Technologies, TESSCO, The Antenna Company International, Vertical Bridge Holdings, Virtual Network Communications, and Windstream.

the CBRS ecosystem—has developed and is now finalizing the standards and protocols to enable the CBRS sharing framework.⁸ CBRS stakeholders have engaged in a wide variety of trials, including large-scale field trials, in preparation for the commencement of commercial operations in the near term.⁹ In addition, the Commission has conditionally certified seven applicants to serve as SAS administrators¹⁰ and received a second wave of applications,¹¹ with final certification of SAS administrators expected in early January 2018.

As demonstrated above, there is widespread momentum throughout all sectors of the CBRS ecosystem, and the service is ready to launch as soon as SAS certification is complete. In view of this industry readiness, it is paramount that any proceeding the Commission initiates be narrowly targeted to address the questions as to PAL license areas, license terms, and minor adjustments to technical rules raised by the CTIA petition and Qualcomm *ex parte*. But consideration of these issues does not have to, and should not, stall progress on certifications and launching service on GAA spectrum, ensuring that CBRS spectrum is promptly put to the widespread, dense, shared use the Commission envisioned in the *3.5 GHz Order*.

⁸ Indeed, the final technical specification needed to complete certification of SAS administrators is currently in ballot at the Wireless Innovation Forum.

⁹ See, e.g., Monica Allevén, *A Year in, What's Happening with Google, Verizon, Nokia and the 3.5 GHz CBRS Band?*, FIERCEWIRELESS (published Apr. 7, 2017), available at <http://www.fiercewireless.com/wireless/a-year-what-s-happening-google-verizon-nokia-and-3-5-ghz-cbrs-band> (stating that it is “remarkable how far the 3.5 GHz sector has come in one year”); Monica Allevén, *Verizon Aims to Deploy Small Cells in 3.5 GHz When Practical*, FIERCEWIRELESS (published Mar. 10, 2017), available at <http://www.fiercewireless.com/tech/verizon-aims-to-deploy-small-cells-3-5-ghz-when-practical>; Monica Allevén, *AT&T Continues Quest to Test at 3.5 GHz*, FIERCEWIRELESS (published Mar. 7, 2017), available at <http://www.fiercewireless.com/tech/at-t-continues-quest-to-test-at-3-5-ghz>.

¹⁰ *Wireless Telecommunications Bureau and Office of Engineering and Technology Conditionally Approve Seven Spectrum Access System Administrators for the 3.5 GHz Band*, GN Docket No. 15-319, Public Notice, DA 16-1426 (WTB/OET 2016).

¹¹ *Wireless Telecommunications Bureau and Office of Engineering and Technology Establish “Second Wave” Deadline for Proposals from Prospective Spectrum Access System (SAS) Administrator(s) and Environmental Sensing Capability (ESC) Operator(s)*, GN Docket No. 15-319, Public Notice, DA 17-339 (WTB/OET 2017).

II. THE T-MOBILE PETITION CONSTITUTES A TRANSPARENT AND UNREASONABLE ATTEMPT TO RETROFIT THE 3.5 GHZ INNOVATION BAND INTO A TRADITIONAL EXCLUSIVE LICENSING REGIME, WHICH ALREADY WAS REJECTED BY THE COMMISSION, AND SHOULD BE AGAIN.

In its petition, T-Mobile requests that the Commission make drastic changes to the CBRS licensing scheme to allow PAL users to occupy the entire 150 MHz of CBRS spectrum, to bid on specific, fixed spectrum blocks, and to further increase the permitted output power for outdoor operations to align with conventional macrocell operations.¹² This proposal constitutes a bald-faced attempt to transform the innovative three-tier sharing framework into a traditional exclusive licensing scheme, with the practical effect of undermining the dense sharing regime the Part 96 rules seek to enable. The Commission already considered these arguments in the past and rejected them. It should do the same here.

The cumulative effect of T-Mobile's proposals would be to allow three PAL users to occupy the entire CBRS spectrum in a given license area, each with a fixed 50 MHz allocation, to the detriment—and quite possibly the exclusion—of opportunistic use by GAA users. In effect, notwithstanding required protection of Federal and satellite incumbents, the PAL tier would be converted to primary status under a traditional exclusive licensing scheme, with the GAA tier, at best, relegated to secondary status. This proposal would eviscerate the GAA tier, as the opportunistic use T-Mobile proposes would be insufficient to support the development of the GAA ecosystem envisioned by the Commission in the *3.5 GHz Order*. The Commission considered similar requests to T-Mobile's in 2015 and reached the same conclusion, finding that “The combination of fixed channel assignments for PALs and indefinite license renewals could permanently prevent GAA use of certain portions of the band, particularly in regions of high

¹² T-Mobile Petition at 9-11, 15-16, 22-23.

commercial interest.”¹³ Moreover, with regard to T-Mobile’s request that the entire 150 MHz be licensed on a PAL basis, the Commission already concluded that “ensuring that a stable and significant quantity of spectrum is available for both Priority Access Licensees and GAA will foster innovation, encourage efficient use of the band, and create an environment conducive to a wide array of potential users and uses.”¹⁴

The Commission has rightly rejected requests to license the 3.5 GHz band on a traditional, exclusive basis in the First R&O, instead deciding to enable innovative shared use in the band. The T-Mobile petition provides no rational basis for its attempt to relitigate the decision the Commission made in reliance on a robust record, instead relying only on conclusory statements that carriers require “certainty” to invest in deployments and a “stable and predictable” spectrum environment in order to plan their networks.¹⁵ This is simply an unsupported repetition of an argument the Commission has already considered and found unconvincing:

We realize that operators traditionally have planned their networks with certain static assumptions about frequency assignments, reflecting the exclusive-use licenses they hold in other bands. However, we do not agree that static assignments are always necessary to plan and operate a network – particularly a network with ‘islands’ of small cell clusters – or that utilizing a flexibly assigned band would disrupt network deployments. To the contrary, as explained above, we believe that automated assignment will benefit wireless broadband providers by providing an additional measure of resiliency and flexibility.¹⁶

With respect to T-Mobile’s claim that its proposals are necessary to incent carrier investment in CBRS, just as in 2015, “the record includes substantial evidence from commenters that are interested in investing in a three-tier band and, as such, we do not believe that it is in the public interest to delay or compromise its implementation.”¹⁷ As noted above, more than 65 companies

¹³ 3.5 GHz Order at ¶ 58.

¹⁴ *Id.* at ¶ 63.

¹⁵ T-Mobile Petition at 15.

¹⁶ 3.5 GHz Order at ¶ 83.

¹⁷ *Id.* at ¶ 58.

are engaged in the CBRS Alliance and are actively investing in the service and moving toward commercial launch. Federated Wireless itself, in partnership with a number of industry players, has completed or has underway more than 40 trials, some of which are large-scale field trials, of CBRS technology and operations.¹⁸ Other stakeholders are similarly engaged in widespread preparations for commencement of commercial operations.¹⁹ There is, without question, widespread industry interest and investment in the CBRS ecosystem as it exists under the current Part 96 rules.²⁰

Finally, T-Mobile has characterized its proposal as necessary to incent carriers to invest in and deploy 5G technologies in the band.²¹ This ignores the fact that the CBRS is explicitly a *technologically neutral* service, as clearly reflected in both the Part 96 rules and the text of the *3.5 GHz Order*.²² As the Commission explained in 2015, “the 3.5 GHz Band could potentially engender a wide diversity of network deployments, including by some nontraditional entrants that do not operate mobile networks in other spectrum. To this end, we will observe the development of technology standards for this band, with an eye toward ensuring they include, rather than preclude, a wide variety of uses and users.”²³ The evolution of the CBRS since adoption of the *3.5 GHz Order* has borne this out, as the expected uses of CBRS will include multiple technologies including LTE, WiMAX, and proprietary technologies. Just as other bands have evolved to accommodate the introduction of new technology, so, too, will the CBRS.

¹⁸ See Monica Allevan, *Federated Wireless Racks up 40 Trials for 3.5 GHz CBRS Spectrum Sharing System*, FIERCEWIRELESS (published June 19, 2017), available at <http://www.fiercewireless.com/wireless/federated-wireless-racks-up-40-trials-for-3-5-ghz-cbrs-spectrum-sharing-system>.

¹⁹ See, e.g., United States Cellular Corporation, Request for Special Temporary Authority, ELS File No. 0692-EX-ST-2017 (filed May 26, 2017); Ericsson, Request for Experimental License, ELS File No. 0204-EX-CN-2017 (filed Mar. 31, 2017); Google, Inc., Request for Experimental License, ELS File No. 0539-EX-PL-2016 (filed Aug. 5, 2016).

²⁰ See T-Mobile Petition at 6, n.21 (citing a number of news releases and reports highlighting investment and experimentation in the 3.5 GHz band).

²¹ *Id.* at 5-9.

²² See, e.g., 47 C.F.R. § 96.39(c) (requiring users to register with the SAS the air interface technology used in their devices); *3.5 GHz Order* at ¶¶ 228 (holding that the requirement that CBSDs be capable of two-way operation is “consistent with the Commission’s longstanding policies promoting technological neutrality and competition in emerging bands”).

²³ *3.5 GHz Order* at ¶ 228.

T-Mobile’s proposal to license the entire CBRS on a PAL basis, with fixed 50 MHz spectrum blocks, is a simple recitation of arguments the Commission has considered and previously rejected. It is therefore unsurprising that no other carrier or wireless trade association has joined in T-Mobile’s request, despite T-Mobile’s protestations that its proposal is necessary to promote carrier investment in the band. T-Mobile’s proposal is unsupported, and unsupportable in view of the record on which the Commission relied in the *3.5 GHz Order* and the ongoing industry engagement in the band. It must be promptly, and summarily, rejected.

III. THE COMMISSION SHOULD CONSIDER HOW BEST TO BALANCE THE PRIVACY AND SECURITY OF CBRS USER INFORMATION WITH THE NEED TO SECURELY EXCHANGE INFORMATION TO ENABLE DENSE, EFFICIENT SPECTRUM SHARING.

In the *3.5 GHz Order*, the Commission required that “SAS Administrators must make CBSD registration information available to the general public, but they must obfuscate the identities of the licensees providing the information for any public disclosures.”²⁴ In their petitions, both CTIA and T-Mobile object to the publication of CBSD registration information and ask that the Commission require that SAS administrators protect such information from public disclosure.²⁵

As the Commission has previously noted, the type of CBRS user information that may be shared and the circumstances under which it may be exchanged requires that the Commission strike an appropriate balance between the legitimate data privacy and security concerns of CBRS users and the need for current and prospective users to effectively plan their future deployments.²⁶

²⁴ *Id.* at ¶ 328.

²⁵ CTIA Petition at 11-12; T-Mobile Petition at 19-20.

²⁶ *3.5 GHz Order* at ¶ 322.

Where this appropriate balance lies has been the subject of ongoing discussion in the CBRS community.²⁷ In September 2016, a number of CBRS stakeholders presented to the Commission a proposed framework to categorize the types of CBRS information to be held by SAS administrators and govern the ways in which information falling under each category could be used.²⁸ Under this framework, certain types of CBSD registration information would be published, with the remaining CBRS user information treated confidentially.

Federated Wireless was the first prospective SAS administrator to highlight the need to assure the security of CBRS users' sensitive and proprietary data, explaining to the Commission that "CBRS users must be assured that their valuable information will be handled appropriately, competitively sensitive information will not be disclosed, and end user privacy will be maintained."²⁹ Federated Wireless agrees with CTIA that publication of precise CBSD registration information serves no public benefit.³⁰ SAS administrators should nevertheless be permitted to depict information needed by current or prospective CBRS users to plan and operate their installations. Such information could include visualizations based on certain anonymized or obfuscated registration information. To this end, the Commission may wish to clarify the meaning of section 96.55(a)(3), which provides that "SAS Administrators must make CBSD registration information available to the general public, but they must obfuscate the identities of the licensees providing the information for any public disclosures."³¹ In particular, the Commission should clarify the meaning

²⁷ See, e.g., Letter from Paul Anuszkiewicz, Vice President – Spectrum Planning, CTIA, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 12-354 (filed June 28, 2016); Letter from Austin C. Schlick, Director, Communications Law, Google, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 12-354 (filed July 15, 2016).

²⁸ See Letter from Brian M. Josef, Assistant Vice President, Regulatory Affairs, CTIA, to Marlene H. Dortch, Secretary, FCC, GN Docket 15-319 (filed Sep. 28, 2016).

²⁹ See Proposal By Federated Wireless, Inc. to Serve as a Spectrum Access System Administrator and Environmental Sensing Capability Operator in the 3550 – 3700 MHz Band, GN Docket No. 15-319, at 8 (filed May 16, 2016).

³⁰ See CTIA Petition at 11.

³¹ 47 C.F.R. § 96.55(a)(3).

of “CBSD registration information” and “obfuscate the identities of the licensees providing the information” with respect to SAS administrators’ publication and data protection obligations.

Federated Wireless encourages the Commission to take the concerns of CTIA and T-Mobile into consideration and promptly seek comment on how best to clarify the meaning of section 96.55(a)(3) to maintain the privacy and security of CBRS user data, while also ensuring that current and prospective users are able to successfully plan their deployments.

IV. CONCLUSION.

Federated Wireless commends the Commission on its innovative efforts in developing the CBRS, and stands ready for its certifications later this year and commercial launch in 2018. With respect to the petitions before the Commission, Federated recommends that the Commission should: (1) resolve the pending petitions for rulemaking related to the PAL tier while in parallel pushing forward with final certification of SAS administrators and ESC operators by January 2018, as planned, so that GAA deployment and operations can commence in 2018 while the Commission considers any appropriate rule changes for PAL spectrum; (2) summarily reject the request by T-Mobile to convert the CBRS into a traditional, exclusive licensing regime; and (3) seek comment on how best to balance the data security and privacy needs of CBRS users with the need to allow current and prospective users to plan their deployments and maximize the efficiency of spectrum use.

Respectfully submitted,

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