

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

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| In the Matter of |) | |
| |) | |
| Wireless Telecommunications Bureau and |) | GN Docket No. 12-354 |
| Office of Engineering and Technology Seek |) | RM-11788 |
| Comment on Petitions for Rulemaking |) | RM-11789 |
| Regarding the Citizens Broadband Radio |) | |
| Service |) | |

To: Chief, Wireless Telecommunications Bureau
Chief, Office of Engineering and Technology

**REPLY COMMENTS OF
THE WIRELESS INTERNET SERVICE PROVIDERS ASSOCIATION**

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SUMMARY

The record in this proceeding reflects overwhelming resistance to the transparent efforts of the mobile wireless industry to convert the CBRS band from one that is open to innovation, investment, and deployment by all to one that is available only to a select few that believe that they alone are entitled to its future benefits. More than 70 wireless internet service providers (“WISPs”) and dozens of others have opposed the Priority Access License (“PAL”) rule changes proposed by CTIA and T-Mobile. This diverse array of opposing commenters cited both their demonstrated reliance on comprehensive rules adopted just two years ago, and refined in 2016, and their desire to continue to deliver much-needed services to consumers in support of rejecting the two Petitions. Based on these well-supported arguments, the Commission should deny the CTIA and T-Mobile Petitions and quickly resolve any remaining aspects of this proceeding.

The Wireless Internet Service Providers Association (“WISPA”) has a strong interest in this proceeding. Its members, many of which provide fixed wireless broadband service to rural Americans that would otherwise lack broadband access or choice, has long eyed the CBRS band as a key spectrum tool to enable and extend broadband service. As the record shows, many WISPs have invested significant funds to deploy service in the 3650-3700 MHz band in reliance on the ability to upgrade software in order to use the same equipment throughout the 3550-3700 MHz band. New equipment manufacturers have launched operations in the United States and are competing robustly in the marketplace. Thousands of rural Americans are already the beneficiaries of the burgeoning CBRS ecosystem.

The CTIA and T-Mobile petitions would, if adopted, strand this investment and decelerate bridging of the digital divide through rule changes that would foreclose participation by small companies that are willing to immediately invest and deploy now in favor of a few

larger, spectrum-sated mobile wireless companies that suggest a long-term path to 5G. As some commenters have pointed out, shorter term licenses will stimulate investment, whereas longer term licenses with no performance obligations encourage spectrum warehousing. If the Commission were to adopt the Petitions and increase the length of the CBRS license term, add a renewal expectancy with no associated performance requirements, and use Partial Economic Areas that are orders of magnitude larger than census tracts to auction PAL licenses, the price of these licenses would be too high for all but the well-heeled mobile giants. That outcome would not only be contrary to the rules adopted in 2015, but would make manifest an unfortunate policy choice that many rural Americans will need to wait longer for broadband in their homes.

Furthermore, T-Mobile garnered no support for its ham-handed attempt to eliminate General Authorized Access (“GAA”) channels and adopt a 50-megahertz cap for PALs. It stands alone as the only proponent of a plan that would permit higher-tier PALs to cause massive and unchecked interference to existing commercial operations that would be GAA users post-transition. The Commission should immediately deny T-Mobile’s petition with respect to this proposal in order to restore some degree of certainty to existing licensees who have already invested in the 3.5 GHz band.

In sum, the comments in this proceeding present a clear choice between enabling a spectrum band to reach those that have “no G” in their homes to one that is exclusive to large carriers *only* for mobile “5G.” In WISPA’s view, this should not be a close call. The current CBRS model enables all use cases, including 5G, and the rule changes proposed by CTIA and T-Mobile to fundamentally and artificially alter the band’s ecosystem should be swiftly denied.

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**REPLY COMMENTS OF
THE WIRELESS INTERNET SERVICE PROVIDERS ASSOCIATION**

The Wireless Internet Service Providers Association (“WISPA”), pursuant to Section 1.405 of the Commission’s Rules,¹ hereby replies to certain of the initial comments filed in the above-captioned proceeding. The record does not support the changes to the licensing rules proposed by CTIA² and T-Mobile USA, Inc. (“T-Mobile”) in their Petitions for Rulemaking (“Petitions”).³ Therefore, the Commission should deny the Petitions for Rulemaking with respect to the licensing proposals, and limit any forthcoming rulemaking proceeding to consideration of the relevant technical issues and the rule clarification sought by WISPA.⁴

Consistent with WISPA’s views, the record demonstrates overwhelming opposition to the licensing changes proposed in the Petitions. A large number of comments from a diverse group of companies convincingly demonstrates that lengthening Priority Access License (“PAL”) terms to 10 years, adding a renewal expectancy, and dramatically increasing the geographic scope of PALs will raise the price of PALs so much that other use cases would be effectively foreclosed

¹ 47 C.F.R. § 1.405.

² See CTIA Petition for Rulemaking, GN Docket No. 12-354 (filed June 16, 2017) (“CTIA Petition”).

³ See T-Mobile Petition for Rulemaking, GN Docket No. 12-354 (filed June 19, 2017) (“T-Mobile Petition”).

⁴ See Comments of WISPA, GN Docket No. 12-354 (filed July 24, 2017) (“WISPA Comments”), at 33-35 (seeking clarification of “facilitates coordination” in Section 96.53(j)).

in favor of a single, unproven marketing term called “5G.”⁵ The current rules accommodate multiple use cases that do not exclude 5G mobile applications, but the mobile industry’s proposals would facilitate *only* mobile 5G. That outcome would be diametrically opposed to the rules the Commission unanimously adopted just two years ago, would contravene the substantial reliance interests engendered by those rules, would disregard the Commission’s frequently expressed objective of maintaining technology neutral policies and regulations, and would deny the public the benefits of innovation, investment, and deployment.

No commenter appears to support T-Mobile’s additional disastrous proposal to eliminate General Authorized Access (“GAA”) channels and to allow PALs in the 3650-3700 MHz band where PAL operations would be permitted to inflict harmful interference on consumers. Existing 3650-3700 MHz licensees – many of them WISPA members that have significant operations in the band – showed that they and their customers would be significantly adversely impacted by this proposal and would be thwarted in their efforts to expand rural broadband service. The Commission should refuse to entertain this additional T-Mobile proposal.

The record demonstrates support for WISPA’s view that the Commission should not amend the public disclosure rules for Citizens Broadband Radio Service Devices (“CBSDs”). Reasons advanced by the mobile industry to obscure non-confidential information that would facilitate efficient spectrum use are unavailing, and the Commission should maintain the database transparency adopted in the initial CBRS rules.

⁵ See, e.g., Comments of Motorola Solutions, Inc. in Response to Petitions for Rulemaking, GN Docket No. 12-354 (filed July 24, 2017) (“Motorola Comments”); Comments of Casa Systems, GN Docket No. 12-354 (filed July 21, 2017) (“Casa Systems Comments”); Letter from David Wright, Director, Regulatory Affairs and Network Standards, Ruckus, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017) (“Ruckus Comments”).

On one thing there is broad agreement, even among commenters that sharply divide on the proposed rule changes – the need for the Commission to act quickly.⁶ Should the Commission decide to adopt a notice of proposed rulemaking, it should heed Commissioner O’Rielly’s call that “the Commission will vote on a notice of proposed rulemaking in the fall and an order as the New Year arrives or soon thereafter.”⁷ Any delay in this time frame will exacerbate the demonstrable uncertainty that has already arisen from the mere filing of the Petitions.

Discussion

I. THE RECORD DEMONSTRATES THAT THE COMMISSION SHOULD NOT PROPOSE CHANGES TO THE CBRS LICENSING RULES

In their Petitions, CTIA and T-Mobile made identical proposals to extend PAL terms to 10 years and add a renewal expectancy, and to auction PALs according to Partial Economic Areas (“PEAs”). These proposals were met with strong opposition from a large number of diverse commenters representing multiple use cases. To summarize their views, making license terms essentially perpetual and increasing by 178 times the average size of the geographic areas⁸ will, inherently and by orders of magnitude, preclude participation in the PAL auctions by all but a handful of the largest companies – the same mobile providers that already hold the vast majority of licensed spectrum today. The Commission should not permit the Petitions to

⁶ See, e.g., Comments of Verizon, GN Docket No. 12-354 (filed July 24, 2017) (“Verizon Comments”), at 2; Comments of Southern Linc, GN Docket No. 12-354 (filed July 24, 2017) (“Southern Linc Comments”), at 2; Comments of NCTA – The Internet & Television Association, GN Docket No. 12-354 (filed July 24, 2017) (“NCTA Comments”), at 17; Comments of the Telecommunications Industry Association, GN Docket No. 12-354 (filed July 24, 2017) (“TIA Comments”), at 2.

⁷ Remarks of FCC Commissioner Michael O’Rielly Before the Free State Foundation, Washington, DC, “Next Generation 5G Wireless Networks: Seizing the Opportunities and Overcoming the Obstacles,” July 25, 2017, at 3.

⁸ Comments of Google Inc. and Alphabet Access in Response to Petitions for Rulemaking, GN Docket No. 12-354 (filed July 24, 2017) (“Google Comments”), at 22.

“attempt to retrofit the 3.5 GHz innovation band into a traditional exclusive licensing regime.”⁹

To quote one filer, this is “just a land grab in the electronic sense.”¹⁰

A. If Adopted, The Proposed Changes Would Contravene The Reliance Interests Of Existing Operators

The record demonstrates that there has been significant investment and deployment in reliance on the rules adopted in the *CBRS Order* and the Commission’s invitation for “Grandfathered Wireless Broadband Licensees to procure equipment with an eye toward complying with the Part 96 technical rules once the transition is completed.”¹¹ A small sampling of the record confirms that industry has responded precisely as the Commission intended. For example, Cal.net, Inc., a fixed wireless broadband provider in rural California, stated that it:

has invested several million dollars in equipment and infrastructure utilizing and supporting this [3650-3700 MHz] band. With the opening of the CBRS band (as defined under current FCC rules), we are embarking upon an aggressive growth path of an additional expected investment of over \$10 million in CBRS-enabled fixed-LTE equipment in our rural service areas over the next 30 months.¹²

Similar to other submissions in the record, Joink, LLC, stated that “many small operators, like Joink, have already invested in and deployed equipment capable of utilizing the CBRS band... Approximately half of Joink’s 2017 wireless investment has gone towards CBRS capable equipment and a larger portion is currently planned for Q4 2017 and all of 2018.”¹³ Another,

⁹ Comments of Federated Wireless, Inc., GN Docket No. 12-354 (filed July 24, 2017) (“Federated Wireless Comments”), at 3. *See also* Comments of Vivint Wireless, Inc., GN Docket No. 12-354 (filed July 24, 2017), at 4 (“The FCC should not permit mobile providers to turn the 3.5 GHz band into another cellular band”) (“Vivint Comments”).

¹⁰ Letter from Forbes Mercy, President, Washington Broadband, Inc., to The Honorable Ajit Pai, *et al.*, GN Docket No. 12-354 (filed July 24, 2017), at 2. *See also* Letter from Jerry Bickle, President, RF Design Services, LLC, GN Docket No. 12-354 (filed July 18, 2017), at 1 (“one more spectrum grab”).

¹¹ *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, 30 FCC Rcd 3959, 4079 (2015) (“*CBRS Order*”).

¹² Letter from Kenneth E. Garnett, Chief Technology Officer, Cal.net, Inc., to The Honorable Ajit Pai, FCC Chairman, *et al.*, GN Docket No. 12-354 (filed July 24, 2017), at 1.

¹³ Letter from Brian Gray, Connectivity Manager, Joink, LLC, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017). *See also* Letter from Roland Houin, President, Fourway Computer Products, Inc., GN Docket No. 12-354 (filed July 20, 2017); Letter from Joseph Monroe, Owner, Plains Internet, LLC, GN Docket No. 12-354 (filed July 24, 2017); Letter from Michael Clemons, President, GigaBeam Networks, LLC, to Marlene

BDA Wireless, LLC, a start-up provider in rural Alabama, explained that “[o]ur company has invested thousands in 3650-3700 equipment that is designed to work within all current requirements of CBRS.”¹⁴ Rise Broadband, the country’s largest WISP, reported that it has “spent millions of dollars deploying base stations in the band” and “had every expectation that the rules adopted in 2015 would remain in place.”¹⁵ Rise Broadband explained that some of its investment and deployment is supporting build-out of rural broadband experiments that are funded with millions of dollars of Commission support to deploy broadband service to unserved rural Americans.¹⁶

Unfortunately, some filers stated that they are already re-assessing their investment in the 3550-3700 MHz band because of the uncertainty the Petitions present. According to Amplex, a WISP in rural Northwest Ohio:

Amplex uses the 3.65 band to provide service to over 1600 customers which will be convert[ed] to CBRS equipment once the ecosystem is available. Amplex has every intention of bidding on PAL’s in our service area and greatly expanding our use of the CBRS band. *Yet over the last several months we have scaled back our investment due to uncertainty over the future of this band.* The current licenses in 3650 expire in less than 4 years, yet the FCC continues to change rules and delay the PAL auctions. Continued investment in a band that we may lose is extremely risky.¹⁷

H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017) (“Our current investment in this technology [in the 3650 band] will exceed \$450,000 in this year alone and we have plans to invest up to an additional \$500,000 over the next two years”); Letter from Robert Sullivan, CEO and President, Virginia Broadband, LLC, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017) (“Virginia Broadband has also invested heavily in the future of CBRS technology - changing the rules mid-course will have a detrimental impact on our business and our customers”).

¹⁴ Comments of BDA Wireless, LLC, GN Docket No. 12-354 (filed July 24, 2017).

¹⁵ Letter from Jeff Kohler, Co-Founder and Chief Development Officer, Rise Broadband, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017), at 1.

¹⁶ *See id.* *See also* Google Comments at 8; Comments of Open Technology Institute at New America and Public Knowledge, GN Docket No. 12-354 (filed July 24, 2017) (“OTI/PK Comments”), at 13-14.

¹⁷ *See* Letter from Mark Radabaugh, President, Amplex Electric, Inc., to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017), at 1 (emphasis added). *See also*, Letter from Patrick Parks, President, SmartBurst LLC, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017), at 1 (“We have invested in and deployed equipment and currently provide services to users in this 3650-3700 MHz band and plan to continue to do so *unless the Commission adopts the proposal of the CTIA and T-Mobile due to the uncertainty it proposes*” [emphasis added]); Letter from Anthony Will, Vice President, Broadband Corp, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017) (“Because of the potential for the CBRS

Rural broadband associations confirm that “the very filing of these petitions, let alone the prospect of a major license overhaul, has cast a pall of regulatory uncertainty over the CBRS band.”¹⁸ Southern Linc also noted “the unnecessary delay and uncertainty that these petitions have already created in the opening of the CBRS band.”¹⁹

Investment in reliance on the *CBRS Order* has also flowed from equipment manufacturers and technology companies. Baicells Technologies reported that “over 1,550 ‘CBRS ready’ LTE base stations have ALREADY been deployed by over 200 predominantly rural broadband operators serving thousands of citizens residing in underserved communities across the USA and we are barely out of the trials stage.”²⁰ These “CBRS-ready” access points can operate in the 3550-3650 MHz band with a firmware upgrade that avoids the need for new hardware and truck rolls.²¹ The WISPA Comments, NCTA Comments, Google Comments and the OTI/PK Comments all noted the significant number of experiments, use cases, and deployments that are already underway that are predicated on the current rules.²²

As is clear, the reliance interests do not exist in the abstract, but benefit actual deployment to rural Americans that would otherwise have “no G.” As another example, Bland County, Virginia, a “rural county with no options available for citizens broadband internet,” reported that it is working with a WISP to bring high-speed broadband to 350 homes in the

band to be modified from it [sic] current proposal we now have stopped any further investment in this band until we can be reasonably certain that the CBRS band will be a viable vehicle for our future growth”).

¹⁸ Joint Comments of the Rural Wireless Association, Inc. and NTCA – The Rural Broadband Association, GN Docket No. 12-354 (filed July 24, 2017) (“RWA/NTCA Comments”), at 3. WISPA agrees with RWA/NTCA that the Petitions constitute late-filed petitions for reconsideration that do not meet the standards for acceptance. *See id.* at 2-4.

¹⁹ Southern Linc Comments at 2.

²⁰ Comments of Baicells Technologies, GN Docket No. 12-354 (filed July 20, 2017), at 1. Baicells is a co-chair of the MuLTEfire Alliance.

²¹ *See* Letter from Stephen E. Coran, Counsel to Rise Broadband and Baicells Technologies, to Marlene H. Dortch, GN Docket No. 12-354 (filed July 28, 2017), at 2.

²² *See* WISPA Comments at 12-13 & Exhibit 2; NCTA – The Internet & Television Association Comments On Petitions For Rulemaking, GN Docket No. 12-354 (filed July 24, 2017) (“NCTA Comments”), at 4-5; Google Comments at 5-11; OTI/PK Comments at 12-19.

county.²³ The County explained that “[d]ue to the terrain and tree coverage in the area, the provider has chosen to utilize LTE technologies to extend and upgrade their network using their current 3.65ghz light license as well as the hopes of using the CBRS band when it becomes available.”²⁴ The hopes of these unserved rural Americans, and millions more across the country, should not be dashed for the sake of a future technology enabled by spectrum concentrated in the hands of a few large companies.

Based on the record, the Commission cannot yield to the prospective interests and speculative benefits CTIA and T-Mobile claim exclusively for the mobile industry, at the exclusion of those that have invested and deployed in reliance on rules adopted in 2008 and in 2015 and desire to use the CBRS band as a means to deliver fixed broadband to those that reside on the wrong side of the digital divide.²⁵ The Commission’s policy, as reflected in the *CBRS*

²³ Letter from Eric R. Workman, Bland County Administrator, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017). *See also* Letter from Nate Steinke, General Manager and Senior Wireless Engineer, Wispwest.net, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017) (“We are just now also using LTE products, which can benefit greatly with additional spectrum in the CBRS band, this is the ONLY hope we have had in improving our capacity and speed to our customers, and to see this jeopardized now would be catastrophic for all of the rural southern part of Montana that we serve”); Letter from Chase Cox, Chief Technology Officer, Northwest Communications, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 20, 2017) (“We are investing hundreds of thousands in our networks to be able to achieve broadband speeds our customers need. In rural Iowa we are seeing many more businesses out of the home and telecommuters. Not to mention all of our farmers and agricultural industries that continually require more and more bandwidth for their operations as AG technologies greatly increase”); Letter from Denise Hamilton, Chief Financial Officer, Rapid Systems, Inc., to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 21, 2017) (“We have millions of dollars invested in 3.65, WIMAX and Cambium product to support Rural Florida Customers so the CBRS band is extremely important”).

²⁴ *Id.* As demonstrated by the record, foliage penetration in some unlicensed bands is a common concern for rural providers that is uniquely addressed via non-line-of-sight propagation characteristics of the CBRS band. *See, e.g.*, Letter from Brian Turner, President, AirFi, Inc., to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017) (“In the rural Central Georgia market we serve, tall dense Pine trees limit our coverage areas currently and we anticipate LTE deployment across our network will triple or quadruple the numbers of households we are able to serve”) (“AirFi Letter”); Letter from Josh Luthman, President, Imagine Networks, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017) (“Due to the landscape and geography, primarily tree obstructions, *[sic]* it is necessary that we use LTE 3.65 GHz to connect some of these customers”); Letter from Al Rachide, Managing Partner, Eastern Carolina Broadband, LLC, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017).

²⁵ The Commission has disfavored rule changes where the existing regulations have engendered significant economic activity to implement service in reliance on those rules. *See, e.g., Investigation of the Spectrum Requirements for Advanced Medical Technologies*, 21 FCC Rcd 8164, 8173 (2006) (“absent compelling reasons, we

Order and the one-sided record, “has engendered serious reliance interests that must be taken into account.”²⁶

B. If Adopted, The Proposed Changes Would Foreclose Future Innovation, Investment, and Deployment

Verizon claims that “[t]he current 3.5 GHz framework provides little incentive” for the degree of investment necessary to create an integrated, heterogeneous network, and that without the proposed rule changes, “the level of investment will be inadequate to maximize band utility for PAL and GAA users alike.”²⁷ However, many commenters agreed with WISPA that the proposed changes to the PAL licensing rules would foreclose innovation, investment, and deployment. As a few examples, Vivint Wireless, which indicated it will “enthusiastically invest” in PALs based on current rules, noted that “the requested changes will harm opportunities for fixed-wireless broadband entrants like Vivint and will lock out new competitors.”²⁸ Highspeedlink.net, a WISP in rural Virginia, explained that “[t]his band has been part of our long term planning to continue to cost effectively serve our community as well

would be reluctant to upset the existing [service] rules ... in light of research and development that has taken place in reliance on our rules, and the products that are and will soon be available to the public as a result”).

²⁶ *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009) (citing *Smiley v. Citibank (South Dakota), N.A.*, 517 U.S. 735, 742 (1996)) (Sometimes an agency must “provide a more detailed justification than what would suffice for a new policy created on a blank slate ... when, for example, its new policy rests upon factual findings that contradict those which underlay its prior policy; or when its prior policy has engendered serious reliance interests that must be taken into account”). Both of the distinct elements cited in *Fox* would be relevant in the case of any significant rule changes adopted in response to the Petitions.

²⁷ Verizon Comments at 3. See also Comments of CTIA, GN Docket No. 12-354 (filed July 24, 2017) (“CTIA Comments”), at 2 (“the Commission should revise the PAL framework to foster certainty, investment, and innovation. Unfortunately the current framework for PALs – with more than 500,000 licenses of 10 MHz each authorized on a census tract basis and three-year nonrenewable license terms – does just the opposite”).

²⁸ Vivint Comments at 1, 2. See also Letter from Richard Bernhardt, Managing Director, Bernhardt Communications Company, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017), at 2 (“These proffered changes [by the Petitions] would devastate opportunities for WISPs and many others smaller and varied entities (than large providers) ability to enter, use and provide services under CBRs”); Letter from Craig Brown, Chief Executive Officer, Blueriver Networking Services, Inc., to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017), at 2 (“To have this investment obsoleted in the short term by adopting the recommendations in the CTIA and T-Mobile petitions would be a devastating financial blow for a company such as ours”) (“Blueriver Letter”); Letter from Mike Boley, President and CEO, Wabash Communications, Inc., to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017), at 2 (“If adopted, the mobile industry’s proposals would undermine our existing investment in 3650-3700 GHz spectrum and inhibit further investment and deployment in the entire 150 Megahertz of spectrum”) (“Wabash Letter”).

as grow our business. Access to this spectrum both in the GAA form as well as PAL will allow us to not only grow our investments even more so but will allow us to move into a more secure spectrum space that will allow our company to offer more services.”²⁹ Similarly, Kentucky-based WISP Fastnet Wireless reported that “[o]nce CBRS is complete we plan on making a huge overlay of our existing network to give even more speeds to existing customers and enhancing coverage to leave nobody unserved.”³⁰ It cannot be denied that the WISP market is poised to invest and deploy in the CBRS band to serve rural consumers that lack broadband access and choice.

While the mobile industry is focused on using CBRS for cellular network and 5G deployment,³¹ a number of diverse parties noted the benefits that the existing licensing rules will create for other use cases such as urban venues and critical infrastructure industries. The City of New York observed that “[t]he well-articulated licensing framework will enable building owners, stadium operators and even, potentially, municipalities to ensure there are no holes in

²⁹ Letter from Alex Phillips, CEO, Rural Broadband Network Service LLC dba Highspeedlink.net, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 21, 2017) at 1. *See also* Letter from Jay Domingue, Business Development, Gonthier, Inc. dba REACH4 Communications, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 18, 2017) (“Reach4 Letter”) (“REACH4 Communications is eager to access additional spectrum in the CBRS band. Because there is more spectrum, we will be able to increase data capacity and offer even higher speeds to our customers. This means more investment in equipment and the ability to reach even more potential customers that still do not have broadband speeds”); Letter from James Bouse, Owner, Brazos WiFi, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017) (“All of our new tower sites are being outfitted with LTE systems with the expectation that the CBRS band will allow us to better service those folks which are hard to reach”); Letter from TecInfo Communications, LLC, GN Docket No. 12-354 (filed July 24, 2017), at 3 (“Additional investment has been made, testing equipment operating at 3.65-3700MHZ utilizing the CBRS band. TecInfo Communications, along with many industry peers are prepared to continue investing into network expansion, reaching many more unserved rural Americans”).

³⁰ Letter from Mike Calvin, Fastnet Wireless LLC, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017), at 1. *See also* Wabash Letter at 2 (“As a small fixed wireless provider in rural Ohio we have invested heavily in equipment operating in the 3650-3700 GHz and are currently adding equipment upgrades to provide faster rural internet service”); Reach4 Letter (“In the last 3 years, REACH4 Communications has invested heavily in 3650-3700Mhz radio equipment to upgrade legacy 900Mhz, 2.4GHz, and 5GHz equipment... Because of the 3650-3700MHz band, we can now offer speeds up to 12 Mbps down and 4 Mbps up on our fixed wireless broadband service”).

³¹ *See, e.g.*, Verizon Comments at 3-4; CTIA Petition at 3 (“Mid-band spectrum like the 3.5 GHz band provides coverage and capacity benefits, especially in dense urban/suburban markets, that are vital to meet consumers’ increasing data demands and facilitate the transition to 5G”).

urban deployments of next generation ‘5G’ wireless technologies, investing in shared infrastructure where no single operator is incentivized to build.”³² Southern Linc noted the band’s ability to support “important public interest needs, such as ‘smart city’ applications like video cameras, pollution monitors, and gunshot sensors, as well as ‘next generation’ electric grid applications such as video surveillance of substations and other critical assets and the deployment of phasor measurement units to achieve the next level of grid reliability and efficiency.”³³ Leidos similarly noted the utility of the band for communications such as smart electric meter programs and cautioned that the proposals in the Petitions “jeopardize the ability of the industry to continue to reliably operate the critical networks in the CBRS band.”³⁴ Casa Systems, “a leading provider of fixed, mobile, optical and Wi-Fi network solutions for ultra-broadband services,” objected to the Petitions, stating that it “is not convinced that the wireless operators would require changes to the spectrum regulations in order to see fit to invest in technologies for this space.”³⁵ It agreed with other commenters that the proposed changes to the PAL rules “would likely lead to only a small number of traditional license spectrum operators being able to use the CBRS band.”³⁶ Angie Communications, which “intends to invest in the building, operation and exploitation of mobile and wireless networks and Fiber systems,” supports a policy that empowers “newcomers where innovation on the infrastructure-level and improved services are preferred and encouraged above monetary gains (by licensing at high auction fees).”³⁷

³² Letter from Michael A. Gamino Jr., Chief Technology Officer, City of New York, to The Honorable Ajit Pai, *et al.*, GN Docket No. 12-354 (filed July 24, 2017), at 1.

³³ Southern Linc Comments at 4.

³⁴ Comments of Leidos, Inc., GN Docket No. 12-354 (filed July 24, 2017) (“Leidos Comments”), at 2.

³⁵ Casa Systems Comments at 8.

³⁶ *Id.* at 11.

³⁷ Comments of Angie Communications USA, Inc., GN Docket No. 12-354 (filed July 24, 2017) (“Angie Comments”), at 2, 5.

Not surprisingly, the limited support for the CTIA and T-Mobile proposals was largely confined to the mobile carriers and their global suppliers.³⁸ Tellingly, none bother to acknowledge the preclusive effect that longer license terms, a renewal expectancy, and vastly larger PAL areas would have on other use cases – they largely respond lockstep to the “5G-only” playbook that CTIA and T-Mobile drafted, remaining tone deaf to investment, innovation, and ongoing experiments and deployment from a wide variety of other use cases.³⁹ The Commission therefore should not initiate a proceeding that proposes the suggested changes to the PAL licensing regime. As Ruckus stated, “[i]f Priority Access is licensed at the PEA level with a virtually perpetual duration, it would rule out that access for all aside from those companies whose business models are based on selling services covering huge areas over very long periods.”⁴⁰

The breadth of opposition from a wide variety of potential CBRS spectrum users juxtaposed with the narrow, industry-specific support for the CTIA proposal, and the company-only support for T-Mobile’s additional scheme, highlights the fact that favorable action on these Petitions would represent a sharp deviation from the Commission’s oft-stated policy goal of maintaining technology-neutral rules, *i.e.*, rules that permit the marketplace and consumer choices to decide which service models succeed.⁴¹ The Commission should not be coerced into putting a thumb on the regulatory scale favoring preclusive mobile use of the band by large carriers based on nothing more than aggressive marketing and conjecture. Such an outcome

³⁸ See, e.g., Verizon Comments; Comments of AT&T Services, Inc., GN Docket No. 12-354 (filed July 24, 2017) (“AT&T Comments”); Comments of Ericsson, GN Docket No. 12-354 (filed July 24, 2017) (“Ericsson Comments”).

³⁹ AT&T recognizes that “neutral host systems, broadband fixed wireless systems, or anchor systems for 5G applications” are possible models, but it fails to appreciate the harmful impact the rules proposed by CTIA and T-Mobile will cause to these use cases. AT&T Comments at 4.

⁴⁰ Ruckus Comments at 8.

⁴¹ See, e.g., *CBRS Order* at 4018 (stating the objective that the CBRS rules be “technology neutral and not overly prescriptive”); *Connect America Fund*, 31 FCC Rcd 5949, 5956 (2016) (establishing “technology-neutral standards” for the Phase II CAF auction).

would be particularly perverse in this instance, where the “5G”-enabled service touted by the dominant mobile carriers is not so much a “technology” as a branding concept used to promote future mobile service aspirations.

1. The Commission Should Retain Short-Term PALs

The mobile industry supports the petitioners’ proposal to increase PAL license terms to 10 years with a renewal expectancy based on claims that this extended period is “traditional”⁴² and will encourage investment.⁴³ Ten-year license terms may be traditional for existing mobile bands and may encourage behemoth mobile companies to invest in 3.5 GHz spectrum, but these justifications originate from a mobile-only point of view and fail to acknowledge other current and future CBRS band use cases. There is abundant evidence in the record that the Commission should not adopt the petitioners’ proposal to extend PAL terms to 10 years in combination with a renewal expectancy. A diverse group of commenters convincingly demonstrated why the Commission should retain the short term licensing approach it adopted in 2015.

The record makes clear that the mobile carriers are not concerned about having long license terms for near-term investment purposes. To quote AT&T, “for the 3.5 GHz band to flourish, the industry must develop standards, certify new devices, produce equipment, design networks, and develop and market consumer devices capable of accessing the 3.5 GHz band.”⁴⁴

⁴² See Verizon Comments at 4; AT&T Comments at 6.

⁴³ See Verizon Comments at 1; AT&T Comments at 11; See Comments of United States Cellular Corporation, GN Docket No. 12-354 (filed July 24, 2017) (“U.S. Cellular Comments”), at 6-7.

⁴⁴ AT&T Comments at 5. See also Comments of Boingo Wireless, Inc. in Support of Petition for Rulemaking, GN Docket No. 12-354 (filed July 24, 2017), at 1 (“Boingo Comments”) (stating that “deploying a network takes several years”). From context, Boingo appears to be commenting on the time it believes it will take to deploy *mobile* networks to accommodate neutral host networks. See *id.* Nokia similarly stated that “it generally takes several quarters to standardize a new frequency band, another year to develop infrastructure equipment and certify it, and over a year to deploy a network.” See Comments of Nokia, GN Docket No. 12-354 (filed July 24, 2017) (“Nokia Comments”) at 4. Nokia may be correct with respect to mobile deployment on a nationwide scale, but at least one WISP provider stated that with only minimal investment as of July 24, 2017, it has tested technology in the 3.5 GHz band, is “preparing for a network wide deployment,” and “expect to have that in place within 60 days.” See Blueriver Letter at 2. WISPs are prepared to utilize this band now, not in six to ten years as mobile commenters have stated. See Nokia Comments at 4.

This is true, apparently, only with respect to a single use case, the so-called “5G” mobile business model. The record is chock full of examples where the band is poised to flourish as soon as final Spectrum Access System (“SAS”) and Environmental Sensing Capability certification occurs and existing equipment can be software upgraded and certified – a matter of months.⁴⁵ To be sure, CBRS can flourish *without* new standards, without new devices, without significant equipment production, without newly designed networks, and without the need to develop and market new consumer devices, and without years of testing, production and implementation. Stripped of rhetoric, the mobile wireless providers seek longer term licenses so they can warehouse spectrum without any build-out obligations, until they develop 5G standards and equipment and, at some point down the road, deploy service – and retain those licenses in perpetuity through a renewal expectancy that, as articulated in the Petitions, lacks any performance requirements.⁴⁶

Contrary to the views espoused by certain commenters from the mobile industry and one other,⁴⁷ short-term licenses encourage investment and deployment, and promote flexibility, while long-term licenses do not: “Instead of incentivizing licensees to invest, long license terms incentivize them to wait. Longer license terms in CBRS, especially coupled with large license areas, will reduce the availability of spectrum for other uses, thus limiting the pool of companies that could invest in the band and minimizing overall investment.”⁴⁸ According to the Dynamic Spectrum Alliance (“DSA”), with technology demanding faster returns on investment, “the only

⁴⁵ See, e.g., WISPA Comments at 6-13; Google Comments at 5-11; Federated Wireless Comments at 2.

⁴⁶ See AT&T Comments at 5.

⁴⁷ See Boingo Comments at 1.

⁴⁸ Comments of Starry, Inc., GN Docket 12-354 (filed July 24, 2017) (“Starry Comments”), at 5.

purpose for such a long license period [of 10 years] with renewal expectancy rights is monetization, not a return on capital investment.”⁴⁹

Moreover, long-term licenses without any performance requirements encourage spectrum warehousing. As NCTA indicates, “the Commission should approach with caution the carriers’ suggestion that it adopt a longer license term and expectation of renewal without accompanying performance requirements. Such an approach would enable spectrum squatting and reduce interest in the band from non-traditional participants.”⁵⁰ This statement lays bare a hidden truth in the CTIA and T-Mobile Petitions – the desire to have a “renewal expectancy” without any underlying obligations that would establish a standard for earning such a “renewal expectancy.”

Finally, WISPA notes the irony in certain arguments advanced by the mobile industry. Ericsson opines that the three-year PAL license term “creates the risk that PAL licensees will face stranded investments, will likely diminish interest in PALs, and may undermine the success to the three-tiered sharing regime.”⁵¹ *But Ericsson totally ignores the investments that have already been made in reliance on the rules adopted in the CBRS Order, the deployments that are in trial, and the customers that are already being served.* Indeed, it is this past investment by dozens if not hundreds of companies that is at risk of being stranded, not future, potential investment in a “5G-only” band that Ericsson’s few large carrier customers favor.⁵²

⁴⁹ Comments of Dynamic Spectrum Alliance, GN Docket No. 12-354 (filed July 24, 2017) (“DSA Comments”), at 12.

⁵⁰ NCTA Comments at 8. *See also* Google Comments at 22 (the conspicuous omission of any recommended build-out requirement “underscores the risk that PAL holders will warehouse their rights to the protected spectrum, rather than deploying service or subleasing to potential competitors who might win away the licensees’ customers with better or less expensive services”); Motorola Comments at 4-5 (“Extending the term of the PAL licensees to 10 years (with an expectation of renewal) would ensure that valuable interference protected spectrum would be controlled by single entities for extended periods of time, without any competition in large areas... Locking in long (or even perpetual) interference protected licenses to a limited number of entities will stunt innovation in the band”).

⁵¹ Ericsson Comments at 6 (citation omitted). *See also* Nokia Comments at 5 (“Nokia is concerned that a number of potential bidders for PALs will simply stay away from this band if the only method of entry is short-term, non-renewable licenses”).

⁵² *See* DSA Comments at 4 (“these investments may be stranded, and future innovation stifled, if significant changes are made to the rules as proposed by both CTIA and T-Mobile”).

The mobile industry presents the alleged investment problem as a false choice between three-year terms and 10-year terms with a renewal expectancy. To the extent the Commission adopts a notice of proposed rulemaking, it should invite comment on alternatives. WISPA has indicated a willingness to consider a slight modification in the length of the license term,⁵³ but has also cautioned that any change in the existing PAL term duration must be strictly limited and must not be coupled with any change in the size of the PAL geographic auction area.⁵⁴ Any further changes would position PALs far beyond the financial reach of innovators and operators that desire to use the band in harmony with each other and, if they are so inclined, the proponents of 5G services.

2. The Commission Should Auction PALs By Census Tracts

AT&T and Verizon support the petitioners' proposals to auction PALs by PEAs instead of census tracts, arguing that the census tract framework is too cumbersome for the Commission to administer⁵⁵ and that census tracts will exacerbate interference issues.⁵⁶ However, the record shows that auctioning PALs based on PEA license boundaries would be inconsistent with the objectives of the *CBRS Order*⁵⁷ and “will create an artificial barrier to entry”⁵⁸ that will chill innovation by precluding a wide range of bidders from participating. As Vivint pointed out, “the combination of dense urban, suburban and rural areas into a single license” is a “major

⁵³ See WISPA Comments at 19-20. See also Ruckus Comments at 9 (willingness to consider “minor adjustments to the PAL structure that would benefit all participants”) (emphasis in original) and Motorola Comments at 5 (“Recognizing that balancing competing needs sometimes requires a degree of compromise, should the Commission choose to lengthen the PAL license term, we suggest extending the term to no more than a 5-year term, with a single (one-time) license renewal allowed”).

⁵⁴ See WISPA Comments at 20. Motorola also stated in reference to the Petitioners' requests for increased PAL area sizes to PEA's, 10 year license terms, and T-Mobile's request that PAL licenses not be restricted to 70 of the 150 MHz available in the band, that “[t]aken together, these three proposals could largely eliminate the availability of the CBRS band for private and secure broadband networks.” Motorola Comments at 3.

⁵⁵ See AT&T Comments at 7; Verizon Comments at 7-8; CTIA Comments at 7.

⁵⁶ See Verizon Comments at 8; AT&T Comments at 9; CTIA Comments at 7.

⁵⁷ See *CBRS Order* at 3992-93.

⁵⁸ Vivint Comments at 5.

obstacle.”⁵⁹ NCTA agreed that larger license areas “would be a poor fit” for CBRS because it would “significantly increase barriers to entry and would therefore depress the development of innovative business models the Commission intended to encourage.”⁶⁰ The discussion in Section I.A above demonstrates that commercial operators representing a large variety of fixed and mobile use cases are knocking at the CBRS door. They should not be denied entry merely because giant mobile wireless companies want exclusive access to the band. Starry has it right:

Petitioners do not support their assertion that larger license areas are more likely to drive investment than the current structure. It might be the case that large license areas are necessary to stimulate investment in low-band spectrum that is designed for coverage and propagates over long distances. That is not the case here. CBRS is designed to provide spectrum access where and when it’s needed. Wireless providers will use sophisticated models to determine where in their networks they have the greatest need for additional capacity, and focus their CBRS deployments in those areas. It makes no sense for them to acquire vast geographic areas that they have no need, desire, or intention to serve.⁶¹

The record thoroughly refutes petitioners’ speculative claims that auctioning census tracts will be too cumbersome for the SAS to manage, too difficult for the Commission to auction, and too burdensome for PAL holders to track and administer their own holdings. WISPA pointed out that these claims were unsupported and belied by the Commission’s recent conclusion of the successful and complex broadcast incentive auction and the availability of various auction designs.⁶² Other commenters agreed.

Importantly, two prospective SAS administrators thoroughly debunked the petitioners’ claims. Sony disagreed that allocating PALs by census tracts would “create unnecessary interference risks and unmanageable challenges for SAS administration. Although allocation by

⁵⁹ *Id.* Vivint noted that Southern California has only two PEAs covering the entire Los Angeles and San Diego areas. *Id.* The use of county boundaries would be of little help here, as counties vary widely in geographic scope, population, and environmental and topographical characteristics. For example, Los Angeles, San Bernardino, Riverside and San Diego counties each cover vast areas of land ranging from urban core to remote desert.

⁶⁰ NCTA Comments at 10. *See also* Motorola Comments at 3 (“Increasing PAL service areas to encompass PEAs will make the interference protected tier of spectrum cost-prohibitive for all but the largest entities”).

⁶¹ Starry Comments at 5.

⁶² *See* WISPA Comments at 21-22.

census tract requires somewhat more sophisticated spectrum management than allocation by larger geographic units such as Partial Economic Areas, Sony’s research and development efforts indicate that *the difference between the two approaches is minor and extremely manageable with a sufficiently robust database implementation.*”⁶³ Google noted that “[n]o candidate SAS administrator has suggested that the existing census tract regulation is beyond its technical capability to implement” – including CTIA, which itself has applied to be certified as an SAS administrator.⁶⁴ A third prospective SAS administrator, Federated Wireless, did not note any agreement with the petitioners’ assertion that it would be too difficult for SAS administrators to deal with census tracts.⁶⁵ And CTIA, despite filing Comments supporting its petition, failed to offer any support for its initial proposition. The Commission should not favor the petitioners’ unsupported and conclusory claims over the specific statements of prospective SAS administrators that relied on the CBRS rules in deciding to apply to be administrators and are well on their way to developing the SAS for Commission certification and commercial use.

Nor will auctioning census tracts prove to be too difficult for the Commission to auction. Starry agreed with WISPA⁶⁶ that “[t]he Commission clearly has the expertise and skills to construct an effective auction for PALs, the only unique characteristic of which will be the number of lots up for auction.”⁶⁷ Starry also noted that the Commission could simplify user interfaces or employ package bidding to reduce complexity.⁶⁸

⁶³ Letter from James Morgan, Director and Counsel, Sony Electronics Inc., to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 21, 2017), at 1-2 (emphasis added).

⁶⁴ Google Comments at 25.

⁶⁵ See Federated Wireless Comments. Despite its agreement with Petitioners that census tracts “could be burdensome,” even Nokia, which applied to be an SAS administrator, stated that it is “important that the Commission also explore the desirability for smaller geographic license sizes...” See Nokia Comments at 6.

⁶⁶ See WISPA Comments at 21-22.

⁶⁷ Starry Comments at 5.

⁶⁸ See *id.* See also OTI/PK Comments at 6.

Both Google and Starry also pointed out that managing a large number of licenses should not present problems for the large mobile carriers, who already manage thousands of licenses. Google noted that large carriers that “offer service over a large number of census tracts will already have internal systems in place to manage their extensive spectrum holdings.”⁶⁹ Starry observed that there are no additional administrative burdens on entities that hold many licenses because there are no build-out requirements to satisfy.⁷⁰ Presumably, licensees with a large number of licenses balance the benefits of the licenses with the costs to maintain them. If the costs prove to be too much for CTIA’s members and T-Mobile, they can choose to be more selective in the PALs they acquire or sit out the auction altogether – a business decision that mobile carriers have made in past auctions, including the recent broadcast incentive auction.

Furthermore, census tracts do not create interference protection problems, as some commenters argue.⁷¹ Google correctly explained that the SAS does not protect census tract boundaries, but rather protects actual CBSD deployments: “the claimed actual service area, which is based on calculations of CBSD coverage area, is the area the SAS protects. The formal boundaries of the license area do not define the area to be protected, except to the extent that service outside of license areas is not protected.”⁷²

NCTA and Charter propose an alternative – to auction PALs by county.⁷³ While NCTA agrees that traditional large mobile license areas “would significantly increase barriers to entry and would therefore depress the development of the innovative business models the Commission intended to encourage,” it argues that county-sized license areas “would significantly reduce the

⁶⁹ Google Comments at 24. Google added that Sprint and its Clearwire subsidiary already hold more than 30,000 active licenses. *See id.*

⁷⁰ *See* Starry Comments at 5.

⁷¹ *See* Verizon Comments at 8; Ericsson Comments at 6.

⁷² Google Comments at 25.

⁷³ *See* NCTA Comments at 9-10; Comments of Charter Communications, Inc., GN Docket No. 12-354 (filed July 24, 2017), at 3.

administrative burden and risk for the Commission, the SAS databases, and licensees, by reducing the total license areas from 74,000 to approximately 3,150.”⁷⁴ WISPA appreciates NCTA’s creativity in attempting to resolve a non-existent problem, but county-sized licenses remain too large for localized deployments that are better suited—and in many cases only suited—for census tract deployment. On average, counties hold about 23 times the population of census tracts; many counties cover thousands of square miles⁷⁵ and more than half the population of the United States lives in just 146 counties.⁷⁶ In many states counties vary greatly in size, and may even have non-contiguous areas. Moreover, the purported burdens that NCTA cites are refuted by the record, most notably by the prospective SAS administrators who both applied for certification under the current rules, and the specific comments of Sony and Google. As WISPA and others have explained, bidders desiring larger geographic footprints can aggregate census blocks to fit their needs, but secondary market rights to enable leasing, disaggregation, and partitioning give the PAL holder the unilateral right to refuse to allow third parties to use licensed spectrum.⁷⁷ In sum, concerns about auction complexity, SAS burdens, and administrative burdens are unfounded. The Commission made the correct policy choice in the *CBRS Order*, which acknowledged the need of some bidders to acquire PALs for small

⁷⁴ NCTA Comments at 10.

⁷⁵ For instance, San Bernardino County, California has a total area of 20,160 square miles. See *San Bernardino County By the Numbers*, SAN BERNARDINO CNTY., <http://wp.sbcounty.gov/cao/countywire/wp-content/uploads/2014/02/County-by-the-Numbers-2-26-141.pdf> (last visited Aug. 2, 2017). All of the top 100 U.S. counties have areas of at least 4,000 square miles. See *American FactFinder County Area Table U.S. Census 2010*, U.S. CENSUS BUREAU, <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkml> (last visited Aug. 2, 2017).

⁷⁶ See Robbie Gonzalez, *Half of the U.S. lives in these 146 counties – is yours one of them?*, Sept. 5, 2013, available at <https://io9.gizmodo.com/half-of-the-u-s-lives-in-these-146-counties-is-yours-1258718775> (last visited Aug. 1, 2017).

⁷⁷ See WISPA Comments at 25; RWA/NTCA Comments at 5 (“entities that wish to serve traditional geographic license areas are free to aggregate multiple contiguous census tracts”); Ruckus Comments at 8 (“the changes would greatly impair the formation of a dynamic secondary trading market for PAL licenses or access, due to the concentration of a smaller number of PAL licenses into the hands of a few very large companies that are not well known for making fallow licensed spectrum available to others”).

geographic areas to promote innovation, investment, and deployment. There is no practical reason or policy justification for the Commission to change course.

C. A Key Solution To America’s Digital Divide Should Not Be Sacrificed To Promote Asserted Global Interests

Nobody can dispute that the United States has a significant digital divide that separates many rural Americans from the benefits of broadband service in their homes and businesses.⁷⁸

The Commission’s own reports make this evident, and the letters in the record confirm the reality of this divide and the ability of the 3550-3700 MHz band to help resolve this American problem.⁷⁹

The petitioners, other mobile carriers, and their equipment suppliers stand virtually alone in suggesting that the Commission should alter the rules to strongly favor only “5G” at the expense of other use cases, including the ability of providers to use the band to expand broadband service to rural communities that lack access or choice. Their arguments present a policy question for which there is only one rational answer – retaining the current structure to enable both “5G” and other cases to co-exist based on market forces.

A few parties attempt to bolster CTIA’s and T-Mobile’s arguments. Ericsson, a foreign-based supplier of mobile wireless equipment, states that mid-band spectrum is being increasingly targeted for 5G around the world and that “[g]lobally harmonized spectrum remains integral to

⁷⁸ See WISPA Comments at 6-8.

⁷⁹ Letter from Scott Stace, Chief Executive Officer, Bluespan Wireless LLC, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 20, 2017) (“Bluespan Letter”), at 2 (“We would be able to provide better access, to more people, and fiber competitive services to rural America because we have already invested in the CBRS band to work with technology vendors who are focused on this spectrum. We will continue to bridge the digital divide for people who need it”) Letter from Jeremy Sheets, President, CMS Internet LLC, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017), at 1-2 (“Furthermore, WISPs have invested in geographic areas that have been historically overlooked by national carriers due to unfavorable demographics... We personally know the majority of our customers, and are dedicated to enriching their lives as we work to eliminate the digital divide one community at a time”); Letter from Joseph Falaschi, General Manager, e-vergent.com, LLC, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017), at 1 (“E-vergent, and other WISPs are part of the macro solution to the Country’s digital divide by providing micro solutions on a small town by small town basis”).

the continued growth of the mobile industry.”⁸⁰ But this argument misses the point because it presupposes that the CBRS band should be allocated *exclusively* for 5G and that other use cases should be precluded. Ericsson ignores the high probability that 5G can co-exist with other use cases, including those that can help cure our American digital divide problem.⁸¹

5G Americas also fails to acknowledge the fact that investment and innovation in the band is occurring outside the strict confines of whatever 5G may become. It argues that the “current rules for the 3550-3700 MHz band make it an island in the middle of a globally harmonizing sea.”⁸² It must be recalled that the 3650-3700 MHz portion of the band was allocated in 2008 *for both fixed and mobile services*, but only fixed deployments from WISPs, electric utilities, and other use cases have flourished to the tune of about 80,000 fixed registered locations.⁸³ As for the 3550-3650 MHz part of the band, investment for 5G is only one of many forms of potential investment opportunity. Limiting opportunities by rule, and not by market forces, is not what the Commission had in mind in 2008 or in 2015, and the Commission has no basis to reverse course now.

If CBRS is important to the U.S. leadership in 5G, it does not follow that the Commission should exclude all other use cases by operation of licensing rules. Ruckus pointed out throughout its Comments that CBRS will enable 5G and the rules enable the “broadening of the LTE ecosystem by supporting access to this spectrum by all types of deployers and operators.”⁸⁴

⁸⁰ Ericsson Comments at 4. *See also* Comments of 5G Americas on T-Mobile Petition, GN Docket No. 12-354 (filed July 24, 2017) (“5G Americas Comments”).

⁸¹ Ruckus Comments at 2-6 (“Petitions are focused solely on optimizing the existing mobile operator deployment model and use case, at the expense of the other deployment models and use cases that will be critical in order to realize the goals of 5G”).

⁸² 5G Americas Comments at 1.

⁸³ *See* WISPA Comments at 10.

⁸⁴ Ruckus Comments at 7. Ruckus further stated, “Similarly, 5G networks will be deployed and operated by a wide variety of entities, ranging from traditional mobile operators to private enterprises, with fixed service providers, rural access companies, municipalities, public venue owners, manufacturers, transportation/logistics companies, and

It emphasized that “[t]he current CBRS framework has established the United States as a leader in coordinated spectrum sharing as the world moves towards 5G. Any changes to the CBRS framework that significantly impact the opportunities for participation at either the PAL or GAA tier will weaken that leadership.”⁸⁵ In other words, the existing licensing rules are facilitating 5G, not hindering it.

Moreover, the Commission should not be misled into believing that the giant mobile carriers are the only ones who can deploy 5G, and that everyone else should abandon their plans. As Casa Systems stated, the CTIA and T-Mobile proposals:

are premised on the idea that “5G” services will necessarily be provided by licensed mobile operators. While that is undoubtedly true for many of these services, it is by no means true for all of them. In fact, it is very possible that the majority of those services will be provided by innovative, new operators, or by technologies that are deployed without the involvement of a wireless operator.⁸⁶

NCTA agreed, explaining that the mobile industry’s “position is premised on the mistaken idea that only traditional licensed technologies can deliver 5G services. But 5G encompasses all next-generation wireless technologies that can deliver higher speeds, more capacity, and lower latency for consumers.”⁸⁷ And, as WISPA has articulated in its Comments and above, the Commission would be contravening the policies it set in 2015 if it were to make the unwise decision to select 5G as the only use and deem the large carriers the only ones who can implement that service. To avoid this result, the Commission should retain its existing CBRS licensing rules.

others all playing a role. It is only via this ‘rich tapestry’ of diverse deployment types that the densification, latency, reliability, and positioning accuracy goals of 5G will be obtained...” *id.* at 2-3.

⁸⁵ *Id.* at 6 (emphasis in original).

⁸⁶ Casa Systems Comments at 3.

⁸⁷ NCTA Comments at 6-7.

II. THERE IS NO RECORD SUPPORT FOR T-MOBILE’S REQUEST TO ELIMINATE GAA CHANNELS AND TO ALLOW PALS IN THE 3650-3700 MHZ BAND

In its Petition, T-Mobile proposes to eliminate GAA channels in the 3550-3700 MHz band and permit PALS in the 3650-3700 MHz band, contrary to rules adopted in the *CBRS Order* that restrict PALS to the 3550-3650 MHz portion of the band.⁸⁸ As discussed in the WISPA Comments, this fundamental change in the band would enable PAL facilities to cause interference to those 3650-3700 MHz operations that become post-transition GAA.⁸⁹ Those commercial operations – which began as far back as 2008 – would inevitably be forced off the air as consumers stop receiving reliable service, investment dries up, and equipment is no longer supported. In cases where consumers lack choice, the effect of the proposed rule change will widen, not narrow, the digital divide. There is little wonder why Federated Wireless called this proposal a “bald-faced attempt to transform the innovative three-tier sharing framework into a traditional exclusive licensing scheme,”⁹⁰ why DSA deemed it a “disaster for the many businesses that have invested in the band in reliance on a three-tiered framework with robust GAA,”⁹¹ and why Angie referred to this proposal as “utterly disturbing and anti-competitive.”⁹²

Incredibly, T-Mobile argues that its proposal is consistent with many of the very parties that oppose its Petition.⁹³ In responding to a joint ex parte letter from a diverse group of parties that included WISPA,⁹⁴ T-Mobile suggests that it does not propose eliminating three-tier licensing structure. This is a non sequitur designed to explain that T-Mobile’s proposal to

⁸⁸ See T-Mobile Petition at 9-11.

⁸⁹ See WISPA Comments at 26-30.

⁹⁰ Federated Wireless Comments at 5.

⁹¹ DSA Comments at 14.

⁹² Angie Comments at 3. See, e.g., Vivint Comments at 2 (“Vivint opposes several changes proposed by CTIA and T-Mobile because, as described herein, the requested changes will harm opportunities for fixed-wireless broadband entrants like Vivint and will lock out new competitors”).

⁹³ See WISPA Comments at 3-5.

⁹⁴ See Letter from All Points Broadband, *et al.*, to Chairman Ajit Pai, GN Docket No. 12-354 (filed June 1, 2017) (“Joint Ex Parte Letter”).

eliminate GAA channels and leave only opportunistic GAA use is somehow consistent with the Joint Ex Parte Letter’s message that the Commission should not make “major changes that would upset the three-tier structure or risk delays in commercial roll-out.”⁹⁵ It is simply disingenuous for T-Mobile to claim that eliminating GAA channels in the entire 3550-3700 MHz band and introducing PALs into a band that the Commission intentionally and rightfully preserved as a “no-PAL zone” is not “major.” Subjecting grandfathered operations to unbridled interference would undo the Commission’s decision to allow incumbent operations to remain in place without fear of receiving interference from PALs. As NCTA observed, “the Commission correctly concluded that GAA was better positioned than PAL users to share frequencies with grandfathered wireless broadband licensees both during and after the transition period.”⁹⁶ Moreover, a two-tiered system without GAA eliminates options for users that may decide to operate on dedicated GAA channels and eliminates “fall-back” GAA options once the PAL channels are authorized.

T-Mobile also contends that its PEA structure is consistent with the Joint Ex Parte Letter’s statement that the band be “economically viable for local broadband users and operators.”⁹⁷ As discussed in the WISPA Comments, “local” does not mean 416 large geographic areas with an average population of more than 700,000 when use cases other than the single one envisioned by T-Mobile are considered.⁹⁸ To be sure, the “wide array of carriers” that T-Mobile expects to bid⁹⁹ would be a small number of companies with bank accounts able to

⁹⁵ *Id.* at 2.

⁹⁶ NCTA Comments at 14.

⁹⁷ Comments of T-Mobile, GN Docket No. 12-354 (filed July 24, 2017) at 4 (quoting Joint Ex Parte Letter at 2) (“T-Mobile Comments”).

⁹⁸ See WISPA Comments at 23. PEAs are approximately 178 times larger than census tracts, which have an optimum population of 4,000.

⁹⁹ T-Mobile Comments at 5.

afford PALs at prices that will be orders of magnitude higher than census tract prices and beyond the financial capabilities of small businesses.¹⁰⁰

In its Petition and its Comments, T-Mobile has twice revealed its lack of understanding of the rights and reliance interests of incumbents, the opportunities the *CBRS Order* created for multiple use cases, and the interests of rural Americans to receive spectrum-based fixed broadband services. The damaging effects of T-Mobile’s myopic and destructive proposals – which garnered no record support – are contrary to the public interest and must be rejected from further consideration by this Commission.

T-Mobile stands alone in its efforts. The list of opponents includes every filer that addressed T-Mobile’s plan to eliminate GAA and to allow PAL licensing of the 3650-3700 MHz band.¹⁰¹ No other commenter, not even T-Mobile’s mobile carrier competitors, supported T-Mobile’s destructive plan to eliminate GAA channels throughout the 3550-3700 MHz band. Verizon,¹⁰² AT&T,¹⁰³ and U.S. Cellular¹⁰⁴ each carefully crafted their respective Comments to

¹⁰⁰ See, e.g., Wabash Letter at 1 (“These changes will convert the ‘innovation band’ the FCC envisioned into a 5G-only band that will be unavailable to WISPs and other small companies that would not have the means to overbid large mobile carriers for licenses that would cost much more. Pricing out many small would-be bidders would essentially ensure that the large mobile wireless carriers have exclusive access to the spectrum”); AirFi Letter (“As a small operator, I am excited about the opportunity to apply for GAA usage as I may not have the funds available at auction time to bid on any census tracts in my service area”); Letter from Mike Whelan, Chief Executive Officer, AirLink Internet Services, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017) (“If the FCC adopted their proposals, AirLink and many other wireless internet providers would not be able to use the GAA spectrum and would be severely limited in bidding for PAL spectrum against the deep pockets of T-Mobile”) (“AirLink Letter”).

¹⁰¹ A small sample of opposing Comments: AirLink Letter (“AirLink Internet Services **opposes** the recently filed petition by CTIA and T-Mobile”) (emphasis in original); Bluespan Letter at 2 (“**We oppose the CTIA and T-Mobile petitions** because they undermine our existing fixed wireless investment and plans for continued expansion in rural areas”) (emphasis in original); Letter from James G. Carr, Chief Executive Officer, Virginia Everywhere, LLC dba All Points Broadband, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 21, 2017). (“All Points opposes the recently filed rulemaking petitions filed by CTIA and T-Mobile”); Letter from Amarillo Wireless, to Marlene H. Dortch, FCC Secretary, GN Docket No. 12-354 (filed July 24, 2017) (“We strongly oppose the CTIA and T-Mobile petitions. Their petitions will hurt our efforts to provide high speed Internet access to the rural areas of the Texas panhandle”); Letter from American Wireless, Inc. d/b/a AWI Networks, GN Docket No. 12-354 (filed July 21, 2017) (“I am writing, on behalf of my company, to voice our opposition to the CTIA and T-Mobile petitions presented to the FCC, requesting specific changes to the CBRS band that will only serve their monopolistic enterprises”).

¹⁰² See Verizon Comments.

avoid any discussion of T-Mobile’s proposal. Five trade associations representing the mobile wireless industry – including of course CTIA itself – refused to endorse T-Mobile’s plan to eliminate GAA channels.¹⁰⁵ RWA/NTCA agreed that T-Mobile’s proposal “would shut out many small and rural providers and new entrants, and essentially would obliterate the GAA tier.”¹⁰⁶ Another association agreed with WISPA that “[e]xpanding the availability of [the 3650-3700 MHz] portion of the band as requested by T-Mobile would disrupt the FCC’s careful calibration of before it even has been tested and cannot be viewed as serving the public interest.”¹⁰⁷ Ericsson, a leading manufacturer of mobile wireless equipment, likewise refused to endorse eliminating GAA channels.¹⁰⁸

In sum, T-Mobile’s proposed rule changes cannot, in any legitimate way, be perceived as “modest” or consistent with the public interest.¹⁰⁹ Any proposal that will have the effect of displacing incumbent operations, stranding millions of dollars of investment made over the last nine years, and harmfully interfering with the ability of American citizens to continue to receive fixed broadband service cannot seriously be characterized as “modest.” To the contrary, and as the unanimous record makes perfectly clear, the proposed rule changes would have a severe and certain impact on existing uses.

With no support for a proposal that “would defeat the entire purpose of the Commission’s decision to establish the CBRS in the first place,”¹¹⁰ the Commission has no basis to include T-

¹⁰³ See AT&T Comments.

¹⁰⁴ See U.S. Cellular Comments.

¹⁰⁵ See CTIA Comments; 5G Americas Comments; RWA/NTCA Comments; TIA Comments; Comments of the Enterprise Wireless Alliance, GN Docket No. 12-354 (filed July 24, 2017) (“EWA Comments”).

¹⁰⁶ RWA/NTCA Comments at 6.

¹⁰⁷ EWA Comments at 5.

¹⁰⁸ See Ericsson Comments.

¹⁰⁹ T-Mobile Comments at 1, 3.

¹¹⁰ Southern Linc Comments at 9.

Mobile's proposal in any notice of proposed rulemaking it may adopt. The Commission should thus make clear, yet again,¹¹¹ that PALs will not be permitted in the 3650-3700 MHz band.

III. THE COMMISSION SHOULD PRESERVE TRANSPARENCY WITH RESPECT TO CBSD INFORMATION

The mobile industry generally agreed with CTIA and T-Mobile that the Commission should amend Section 96.55(a)(3), which makes certain non-identifying CBSD information available to the public.¹¹² These comments provide no new basis for the Commission to consider this rule change, but instead simply reiterate the petitioners' belief that reducing transparency will reduce security risks and protect competitively sensitive information. Information about the location of cellular sites is readily available to the public on the Internet¹¹³ and the rule is "less transparent than the similar publicly-available information in the TV Bands Database" and other Commission databases.¹¹⁴ Google also made clear that there are "legitimate reasons" to make anonymized CBSD information publicly available, "such as enabling potential operators to investigate the feasibility of providing GAA services in an area prior to incurring the cost of attempting to reserve specific spectrum."¹¹⁵ According to OTI/PK, "[b]y keeping site-based deployment secret, CTIA and T-Mobile make it nearly impossible for WISPs and other operators to assess whether there is enough vacant PAL spectrum in an area to support a deployment."¹¹⁶ Transparency also affords other stakeholders, such as the U.S. military, the ability to identify potential errors in the database so interference can be avoided or mitigated.¹¹⁷

¹¹¹ See *CBRS Order* at 4079.

¹¹² See Verizon Comments at 9; AT&T Comments at 11-12; Ericsson Comments at 8-9; 5G Americas Comments at 13; NCTA Comments at 17; Nokia Comments at 8-9.

¹¹³ See Google Comments at 28.

¹¹⁴ OTI/PK Comments at 31.

¹¹⁵ Google Comments at 29.

¹¹⁶ OTI/PK Comments at 32.

¹¹⁷ See *id.*

WISPA agrees that with Google and OTI/PK that the alleged concerns of the mobile industry are illusory and unnecessary. The Commission struck the right balance in the *CBRS Order* and any reduction in transparency is not now warranted.

Conclusion

WISPA agrees with NCTA that “the Commission should make only those rule changes that receive broad support among this diversity of stakeholders, and should preserve the key features of the 3.5 GHz innovation band that drew interest from such stakeholders in the first place.”¹¹⁸ The record here is overwhelming and clear. There is no justification for the Commission to initiate a proceeding that proposes the licensing rule changes urged by CTIA and T-Mobile. The Commission should deny the petitions and terminate the proceedings with respect to those proposals. The Commission also should use the opportunity to clarify the meaning of “facilitates coordination” in Section 96.53(j), as discussed in the WISPA Comments.

Respectfully submitted,

WIRELESS INTERNET SERVICE PROVIDERS ASSOCIATION

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¹¹⁸ NCTA Comments at 7-8.