

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

In the Matter of )  
 )  
Transforming the 2.5 GHz Band ) WT Docket No. 18-120  
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**COMMENTS OF T-MOBILE USA, INC.**

T-Mobile USA, Inc.<sup>1</sup> (“T-Mobile”) herewith files its reply to comments on the above-captioned Notice of Proposed Rulemaking to adopt rules modernizing the Educational Broadband Service (“EBS”), including eliminating outdated restrictions on the use of EBS spectrum.<sup>2</sup> T-Mobile generally supported the *Notice’s* objective to reform EBS rules consistent with more market-oriented regulatory policies. T-Mobile, in particular, supported the proposed elimination of the “educational use” requirement for EBS licensees leasing their spectrum under Section 27.1214 of the FCC’s rules.<sup>3</sup> Reviewing the record, T-Mobile agrees with those commenters that an incentive auction is inappropriate for the EBS band, and instead believes county-based licensing better serves the public interest. T-Mobile believes the record also supports a clear need to modify the educational use requirements and, while some parties believe the appropriate mechanism would be to add conceptually to what is considered “educational,” T-Mobile suggests public policy favors a more enduring and simple elimination of the rules. These proposals are discussed below.

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<sup>1</sup> T-Mobile USA, Inc. is a wholly-owned subsidiary of T-Mobile US, Inc., a publicly-traded company.

<sup>2</sup> Transforming the 2.5 GHz Band, WT Docket No. 18-120 (May 10, 2018) (“*Notice*”).

<sup>3</sup> 47 C.F.R. §27.1214; *see Notice* at ¶22.

As a preliminary matter, the record appears to clearly favor rejecting incentive auctions as a means of rationalizing and whitespace licensing for the EBS band.<sup>4</sup> As stated by Voqal, “incentive auctions are complex and time consuming,” and “very few licensees would participate because of their contracts with commercial providers.”<sup>5</sup> Incentive auctions are most useful to repurpose spectrum when the spectrum in question: (i) is being used for low-value use; (ii) there is sufficient excess spectrum to create a market to determine price equilibrium for high- and low-value uses; and (iii) usage rights are fragmented among disparate owners. EBS spectrum does not conform to these conditions.

First, while incentive auctions are invaluable to resolve situations where secondary markets do not function well, the opposite is true for EBS. Private secondary market transactions have allowed the EBS spectrum to be put to its high value use—in the form of commercial broadband service—in most parts of the country through leasing arrangements with commercial carriers.<sup>6</sup> Based upon these leases wireless carriers have invested billions of dollars

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<sup>4</sup> Comments of North American Catholic Educational Programming Foundation And Mobile Beacon, WT Docket No. 18-120 at 5 (dated Aug. 8, 2018) (“NACEPF Comments”); Comments of Schools, Health & Libraries Broadband Coalition, WT Docket No. 18-120 at 3 (dated Aug. 8, 2018) (“SHLB Comments”); Comments of Sprint Corporation, WT Docket No. 18-120 at 13-14 (dated Aug. 8, 2018) (“Sprint Comments”); Comments of South Florida EBS Licensees (Sch. Bd Of Miami-Dade Cty, Sch. Bd Of Broward Cty, Sch. Bd Of Palm Beach Cty, Florida Atl Univ., And Florida Gateway College), WT Docket No. 18-120 at 11(dated Aug. 8, 2018) (“FL EBS Licensees Comments”); Comments of State Educational Technology Directors Association Corporation, WT Docket No. 18-120 at 9 (dated Aug. 8, 2018) (“SETDA Comments”); Comments of Torstick Ministries, WT Docket No. 18-120 at 2 (dated Aug. 8, 2018) (“Torstick Comments”); Comments of Utah Education And Telehealth Network, WT Docket No. 18-120 at 2 (dated Aug. 8, 2018) (“UETN Comments”); Comments of Voqal, WT Docket No. 18-120 at 25-26 (dated Aug. 8, 2018) (“Voqal Comments”).

<sup>5</sup> Voqal Comments at 26.

<sup>6</sup> Comments of Hispanic Information And Telecommunications Network, Inc., WT Docket No. 18-120 at 3 (dated Aug. 8, 2018) (“HITN Comments”); Comments of Midcontinent Communications, WT Docket No. 18-120 at 13 (dated Aug. 8, 2018) (“Midcontinent

in infrastructure to provide commercial wireless broadband service to tens of millions of consumers. Undoing those leases would be complex, costly, and harmful to the public interest, not only because it would result in the termination of existing service being relied upon by consumers, it would also terminate existing services provided for educational use—services relied upon by educational institutions and students.<sup>7</sup> Additionally, it would be impractical to create an incentive auction that respected existing contractual rights, since those rights have been negotiated at arms-length and already presumably reflect the spectrum’s actual market value; stated another way, there is no gain for the licensee to trade in an incentive auction that preserves market-based leases for like services. Finally, the ultimate use of the spectrum is unlikely to change – in the Broadcast Incentive Auction, there was a significant difference in the use from broadcast television to broadband mobile wireless. In EBS, most of the spectrum is already used for mobile broadband and conducting an incentive auction would delay or disrupt, rather than accelerate, deployment of services.

Second, when the geography and bandwidth of EBS already being used for the provision of broadband service is considered, there is little vacant or surplus spectrum to create a viable market-based auction. The FCC itself found that only about 16.5 percent of the population is in areas that have not been licensed.<sup>8</sup> Additionally, licensees have formed various types of partnerships, meaning there are generally very few different licensees in any given market,

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Comments”); Comments of National EBS Ass’n and Catholic Technology Network, WT Docket No. 18-120 at 3-8 (dated Aug. 8, 2018) (“NEBSA Comments”).

<sup>7</sup> Comments of Northern Arizona University Foundation, Inc., WT Docket No. 18-120 at 8 (dated Aug. 8, 2018) (“NAUF Comments”); NEBSA Comments at 15-16.

<sup>8</sup> *Policies Regarding Mobile Spectrum Holdings*, 29 FCC Rcd 6133, 6187 ¶125 (2014).

reducing the number of competitors for authentic price competition.<sup>9</sup> Thus, the conditions necessary to establish robust competition to determine exit prices do not exist and little, if any, surplus revenue would be generated for the government.

Finally, while the band may appear fragmented in terms of license ownership, these partnerships combined with leases to a handful of wireless providers have already concentrated EBS licenses into manageable high value packages of spectrum used for wireless broadband by consumers. No further rationalization of the license ownership is needed to put fallow spectrum to use in the EBS band. Therefore, an incentive auction would create complexity, regulatory uncertainty, and transaction costs that are likely to impede rather than improve service.

A concrete measure to allow more market-oriented policies to shape the EBS band would be to eliminate the inflexible educational use requirements. And, as discussed herein, doing so would promote new broadband capabilities without impacting existing educational use. T-Mobile notes that while the record reflects a broad range of views on many issues, commenters generally acknowledge across the board that: (i) more extensive wireless broadband deployment

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<sup>9</sup> For example, the vast majority of the EBS licenses in South Carolina appear to have been issued to a statewide entity, which then leased all of the excess capacity through an RFP, see South Carolina Educational Broadband Service Commission Request for Proposals (Jan. 2009); available at: <http://ebcommission.sc.gov/documents/2008-12-31-EBSC-RFPposted-12.31.08.pdf> (last visited Sept. 6, 2018).

is needed for all Americans;<sup>10</sup> (ii) the current educational use requirements are outdated;<sup>11</sup> and (iii) 2.5 GHz could be an excellent 5G deployment band, providing a better coverage layer than millimeter wave bands.<sup>12</sup> Any number of commenters have suggested socially beneficial

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<sup>10</sup> Comments of Association Of Public Television Stations And Corporation For Public Broadcasting, WT Docket No. 18-120 at 4-5 (dated Aug. 8, 2018) (“APTS Comments”); Comments of AT&T, WT Docket No. 18-120 at 1 (dated Aug. 8, 2018) (“AT&T Comments”); Comments of Consortium For School Networking, WT Docket No. 18-120 at 1-2 (dated Aug. 8, 2018) (“CoSN Comments”); Comments of Digital Wish, WT Docket No. 18-120 at 1-2 (dated Aug. 8, 2018) (“Digital Wish Comments”); Comments of Educators And Broadband Providers For American Rural Communities, WT Docket No. 18-120 at 2-3 (dated Aug. 8, 2018) (“EBPARC Comments”); Midcontinent Comments at 1; Comments of North Carolina Department Of Information Technology, Broadband Infrastructure Office, WT Docket No. 18-120 at 1-3 (dated Aug. 8, 2018) (“NC DIT Comments”); Comments of National Digital Inclusion Alliance, WT Docket No. 18-120 at 1-2 (dated Aug. 8, 2018) (“NDIA Comments”); Comments of Nebraska Dept Of Education, Nebraska Educational Television, And The State Of Nebraska Office Of The Chief Information Officer, WT Docket No. 18-120 at 1 (dated Aug. 8, 2018) (“NE Educators Comments”); Comments of Northern Michigan University, WT Docket No. 18-120 at 3-5 (dated Aug. 8, 2018) (“NMU Comments”); Comments of NTCA—The Rural Broadband Association, WT Docket No. 18-120 at 1-2 (dated Aug. 8, 2018) (“NTCA Comments”); Comments of PCs for People, WT Docket No. 18-120 at 1-2 (dated Aug. 8, 2018) (“PCs for People Comments”); Comments of Techsoup, WT Docket No. 18-120 at 1-2 (dated Aug. 8, 2018) (“Techsoup Comments”); Comments of WISPA, WT Docket No. 18-120 at 3-8 (dated Aug. 8, 2018) (“WISPA Comments”).

<sup>11</sup> Comments of A. Miller, WT Docket No. 18-120 at 1 (dated Aug. 8, 2018) (FCC should “[m]odernize the rules for the broadband world”); CoSN Comments at 2 (“[t]he Commission should update the EBS educational use requirement to encompass modern digital learning activities”); EBPARC Comments at 9-10; FL EBS Licensees Comments at 11 (noting “the educational usage rule, based on hours per channel per week, is ill suited to broadband services”); Comments of Gallatin Wireless Internet, LLC, WT Docket No. 18-120 at 4-5 (dated Aug. 8, 2018) (“Gallatin Comments”) HITN Comments at 6-8 (noting “the usage rules are somewhat awkwardly tied to the original educational distance learning video service provided on the band, and which now constitute only one of a number of possible educational uses”); NEBSA Comments at 18-19 (noting “NEBSA and CTN would support a modernized method of measuring educational use, but it is difficult to develop alternate metrics given the differing uses of EBS spectrum by individual licensees”); NTCA Comments at 3-4; Comments of Bridge The Divide Foundation, Inc. And Rocky Mountain Broadband, LLC, WT Docket No. 18-120 at 6 (dated Aug. 8, 2018) (“RMB Comments”); Comments of R Street Institute, LLC, WT Docket No. 18-120 at 5-7 (dated Aug. 8, 2018) (“R St Comments”); SHLB Comments at 4-5.

<sup>12</sup> AT&T Comments at 3-5; Comments of Charter Communications, Inc., WT Docket No. 18-120 at 1-4 (dated Aug. 8, 2018) (“Charter Comments”); Midcontinent Comments at 4-5; Sprint

applications of spectrum use, but, given the potentially conflicting and parochial modifications advocated to the educational use requirements, T-Mobile suggests that elimination of the requirement in its entirety would best serve the public interest and reflect the spectrum's actual use today. Notably, elimination of the educational use requirement does not mean elimination of educational use—educational users will still hold licenses for the spectrum and may still use the spectrum for educational purposes, including the much broader range of services they have discussed today.<sup>13</sup> Indeed, flexible use regulations will also allow them to offer a potentially even broader range of services that may arise in the future, just as the expanded uses of today were not envisioned when the original requirements were adopted, free of government mandates.

Elimination of educational use requirements in favor of flexible use, on the other hand, will stimulate needed deployment of advanced wireless broadband technology for all Americans.<sup>14</sup> As stated by R Street in their comments, “the Commission should remove the current educational-use requirements for the band,” because “[d]esignating particular bands for particular uses is antithetical to flexibility, and it hamstring[s] the ability of markets to direct spectrum to its most productive use.”<sup>15</sup> They continue, stating “[t]he Commission simply cannot expect to know the most productive use of every frequency band at all times,” and therefore “[t]op-down directives . . . would only repeat the mistakes that resulted in this band’s disuse in

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Comments at 2-4; Comments of Verizon, WT Docket No. 18-120 at 1-4 (dated Aug. 8, 2018) (“Verizon Comments”); WISPA Comments at 3-8.

<sup>13</sup> Frankly, for the vast majority of the EBS spectrum today, the educational use is simply achieved through capacity arrangements on commercial spectrum in any event.

<sup>14</sup> Gallatin Comments at 1-2; Midcontinent Comments at 2-4; Comments of Viya, WT Docket No. 18-120 at 3-7 (dated Aug. 8, 2018) (“Viya Comments”); WISPA Comments at 3-8.

<sup>15</sup> R St Comments at 5.

the first place.”<sup>16</sup> If the Commission requires empirical validation of these concepts, the bands that use more flexible regulations—including, for example, PCS and AWS—have allowed the deployment of nationwide networks with near complete population coverage and carrying capacity supporting hundreds of millions of subscribers.

As a final matter, T-Mobile suggests that, given existing commercial arrangements in the 2.5 GHz band, the FCC should simply license new EBS licenses using county-based markets. Not only is the county-based market size favored by the majority of filers commenting on the issue,<sup>17</sup> licensing using Census Tracts has been opposed by most wireless providers in the wireless broadband bands where it has been proposed.<sup>18</sup> Census Tracts are dynamic in size and location and are extremely numerous, making them difficult to manage and organize—there are approximately 3,000 counties compared to 74,000 Census Tracts, so administration of tract licenses will inherently be more complex and require more administrative overhead. As others

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<sup>16</sup> *Id.* at 5-6.

<sup>17</sup> RMB Comments at 3-4; Comments of Educational Broadband Corp., WT Docket No. 18-120 at 1 (dated Aug. 8, 2018) (“EBC Comments”); HITN Comments at 4-5; Comments of Imperial County Office Of Education And California K-12 High Speed Network, WT Docket No. 18-120 at 20 (dated Aug. 8, 2018); Comments of Rural EBS Coalition, WT Docket No. 18-120 at 4 (dated Aug. 8, 2018) (“Rural EBS Comments”); Voqal Comments at 17-20; APTS Comments at 6; NTCA Comments at 3-4; Viya Comments at 14-15; WISPA Comments at 8-9.

<sup>18</sup> Comments of AT&T Services, Inc., GN Docket No. 12-354 at 6-7 (July 24, 2017); Comments of CTIA, GN Docket No. 12-354 at 2 (July 24, 2017); Comments of Ericsson, GN Docket No. 12-354 at 6-7 (July 24, 2017); Comments of T-Mobile USA, Inc., GN Docket No. 12-354 at 4-5 (July 24, 2017); Comments of Verizon, GN Docket No. 12-354 at 7-9 (July 24, 2017); *see also* Letter from Scott K. Bergmann, Senior Vice President, Regulatory Affairs, to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket No. 17-258 (dated July 9, 2018); Letter from Steve B. Sharkey, Vice President, Government Affairs, to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket No. 17-258 et al. at 2-3 (dated July 3, 2018); Letter from Stacey Black, AT&T Services, Inc. to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket No. 17-258 (April 26, 2018); Letter from Steve B. Sharkey, Vice President, Government Affairs, to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket No. 17-258 (dated April 25, 2018).

have noted in other proceedings where tracts have been proposed, the numerous boundaries make RF containment problematic, a problem that would be exacerbated by the relatively higher field strength limits involved with 2.5 GHz equipment that can operate at hundreds of watts of power.<sup>19</sup>

In such regards, the FCC has broadly favored the use of auctions when licensing whitespace in services where the service rule changes are relatively minimal.<sup>20</sup> These auctions have used county-based or larger licenses to provide an approach that permits bidders to express rational values for licenses and build larger service areas in a structured way without excessive complexity. If the FCC elects to auction the whitespace, a simple simultaneous multiple round county auction would be the most efficient method of licensing and putting the spectrum to use by existing EBS licensees and commercial lessees.

As stated in T-Mobile's comments in this docket, it commends the FCC for proposing rules to revitalize and modernize the 2.5 GHz band, both promoting policies that will encourage rational investment in development of broadband services and ensuring continuity of commercial arrangements that provide service to the public and educators. T-Mobile believes the efficient use of 2.5 GHz spectrum can provide capacity benefits for 5G services, if the FCC can adopt efficiency enhancing measures like eliminating outdated educational use requirements. The FCC

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<sup>19</sup> See 47 C.F.R. 27.50(h). Sprint, for example, is deploying HPUE devices in the 2.5 GHz band. HPUE devices are permitted to operate at up to 31 dBm, unlike typical LTE devices, which are restricted to 23 dBm. See Dr. John Saw, "New Report Shows Sprint HPUE Dramatically Improves Network Coverage and Speed" (Feb. 21, 2018); available at: <http://newsroom.sprint.com/new-hpue-report.htm> (last visited Sept. 2, 2018).

<sup>20</sup> See FCC Auction 6 (MMDS); Auction 7 (900 MHz SMR); Auction 12 (Cellular Unserved); Auction 16 & 34 (800 MHz SMR); Auction 30 (39 GHz); Auction 56 (24 GHz).



can also maximize the benefits of such modernization by adopting rules that will permit a fast and equitable licensing process for whitespace at the county-level.

Respectfully submitted,

T-MOBILE USA, INC.

By: /s/\_\_\_\_\_

Steve B. Sharkey  
Vice President, Government Affairs  
Technology and Engineering Policy  
T-Mobile USA, Inc.  
601 Pennsylvania Ave., NW  
Suite 800  
Washington, DC 20004  
(202) 654-5900