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**VIA ELECTRONIC FILING**

Ms. Marlene H. Dortch, Secretary  
Federal Communications Commission  
Office of the Secretary  
445 12th Street, SW  
Washington, DC 20554

Re: *Written Ex Parte Communication*, GN Docket No. 18-122

Dear Ms. Dortch:

Last year, T-Mobile USA, Inc. (“T-Mobile”) proposed an alternative to the C-Band Alliance (“CBA”) Market-Based Approach that would force C-band satellite operators to participate in an incentive auction and cede their existing, investment-backed expectations in their spectrum (the “Original Proposal”).<sup>1</sup> The CBA made clear that the Original Proposal would induce a massive holdout problem, slow 5G deployment to a crawl, and violate the Communications Act’s requirements for incentive auctions to be both voluntary and among competing bidders.<sup>2</sup>

Now, T-Mobile has responded with a revised alternative that invites C-Band earth station operators to compete with satellite operators in an incentive auction to clear between 300-500 MHz of C-Band spectrum (the “New Proposal”).<sup>3</sup> But this shiny substitute is fool’s gold: **The Communications Act does not permit earth station registrants to participate in an incentive auction.** Even if it did, the fundamental issues of its Original Proposal remain. Including more than 17,000 earth stations in 416 separate PEA auctions with 416 different sets of participants would exacerbate the holdout problem and add insurmountable complexity and delay.

Of course, slowing 5G deployment is the very goal T-Mobile seeks to achieve. If its merger with Sprint is approved, T-Mobile will be the first mover to 5G with mid-band spectrum. Delay will preserve this competitive advantage, which is bad for American consumers, but good for T-Mobile. The CBA encourages the Commission to reject T-Mobile’s gambit and adopt the Market-Based Approach expeditiously.

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<sup>1</sup> See generally Comments of T-Mobile USA, Inc. Unless otherwise noted, all filings appear in GN Docket No. 18-122, with Comments filed Oct. 29, 2018 and Reply Comments filed Dec. 11, 2018.

<sup>2</sup> Reply Comments of the C-Band Alliance at 33-36 (Dec. 7, 2018).

<sup>3</sup> Letter from Steve B. Sharkey, Vice President, Government Affairs, Technology and Engineering Policy, T-Mobile USA, Inc. (Feb. 15, 2019) (“T-Mobile Ex Parte”).

*The New Proposal Would Violate the Communications Act.* T-Mobile requests that the Commission inflate its incentive auction authority by allowing non-licensees to dictate the terms of a reverse auction. The New Proposal “includes a mechanism through which satellite earth station registrants can participate in the [incentive] auction.”<sup>4</sup> Indeed, the “C-band incentive auction would invite *all* interested parties to participate, including, importantly, earth station registrants.”<sup>5</sup>

The fundamental problem, however, is that the Communications Act empowers the Commission to conduct incentive auctions only with respect to *licensees*.<sup>6</sup> Specifically, the Act provides that “the Commission may encourage a *licensee* to relinquish voluntarily some or all of its *licensed* spectrum usage rights in order to permit the assignment of new initial licenses.”<sup>7</sup> The Act defines licensee as “the holder of a radio station license granted or continued in force under authority of this chapter.”<sup>8</sup> A “radio station license” is further defined as “that instrument of authorization . . . for the use or operation of apparatus *for transmission* of energy, or communications, or signals by radio, by whatever name the instrument may be designated by the Commission.”<sup>9</sup>

Receive-only earth stations are not licensed, and therefore these registrants are not licensees. As the Commission explained in 1979:

The Communications Act of 1934 does not require licensing of receive-only earth stations. The Act states that a license is “that instrument of authorization required by this Act or the rules and regulations of the Commission made pursuant to this Act, for the use or operation of apparatus for transmission of energy, or communications or signals by radio . . .” while “transmission of energy by radio” is defined to include “both such transmission and all instrumentalities, facilities,

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<sup>4</sup> T-Mobile Ex Parte at 2; *see also id.* at 7-8 (“In addition, the incentive auction plan described above would satisfy Section 309(j)(8)(G)(ii) of the Act. *First*, the Commission would conduct a reverse auction after it conducts a forward auction (the Act does not require the Commission to conduct the reverse and forward auctions in a particular order). *Second*, there would be multiple bidders in a C-band incentive auction – both satellite operators *and* earth station registrants. Satellite operators and earth station registrants could each form separate consortia, but would not be required to do so.”) (emphasis in original).

<sup>5</sup> *Id.* at 5 (emphasis in original).

<sup>6</sup> 47 U.S.C. § 309(j)(8)(G).

<sup>7</sup> *Id.* (emphasis added).

<sup>8</sup> *Id.* at § 153(30); *see also Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd 6567, ¶ 353 (2014) (“Although the Spectrum Act does not define the term ‘licensee,’ we interpret ‘licensee’ to mean ‘the holder of a . . . station license,’ as it is defined in the Communications Act.”).

<sup>9</sup> 47 U.S.C. § 153(49) (emphasis added).

and services incidental to such transmission.” Similarly, Section 301, defines the Commission’s authority over radio as intended “to maintain the control of the United States over all channels of interstate and foreign radio transmission.” Section 301 further states that “no person shall use or operate any apparatus for the transmission of energy or communications or signals by radio . . . except under and in accordance with this Act.” ***By definition, receive-only earth stations do not transmit. While it might be argued that receiving facilities are incidental to radio transmission, the full extension of that argument would be unreasonable because it would require that all television and radio receivers be licensed as well as receive-only earth stations. We therefore conclude that licensing of receive-only earth stations is not mandated by the Act.***<sup>10</sup>

“[A]n administrative agency’s power to regulate in the public interest must always be grounded in a valid grant of authority from Congress.”<sup>11</sup> Here, the Communications Act is unambiguous. Receive-only earth stations are not licensees, and the Communications Act does not grant the Commission authority to allow them to participate in an incentive auction. Similarly, the Communications Act would exclude the so-called “Small Satellite Operators,” ABS Global Ltd., Hispasat S.A., and Embratel Star One S.A, from participating in an incentive auction because they too do not have U.S. licenses.

The New Proposal also doubles down on the Original Proposal’s ignorance of the Communications Act’s requirement that incentive auctions be “voluntary.”<sup>12</sup> T-Mobile claims that its proposed incentive auction “would clearly be voluntary” because either the satellite operators or the receive-only earth stations could opt out of the auction and allow the other party to claim the fee.<sup>13</sup> The result, of course, is that a party that elects not to participate is stripped of its spectrum and left with nothing. Giving satellite operators an illusory choice places a regulatory “gun to the head” that cannot be characterized as “voluntary” and thus violates the Act.<sup>14</sup>

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<sup>10</sup> *In the Matter of Regulation of Domestic Receive-Only Satellite Earth Stations*, 74 F.C.C.2d 205, ¶ 31 (1979) (citations omitted, punctuation altered, and emphasis added).

<sup>11</sup> *Bowen v. Georgetown Univ. Hosp.*, 488 U.S. 204, 208 (1988).

<sup>12</sup> 47 U.S.C. § 309(j)(8)(G).

<sup>13</sup> T-Mobile Ex Parte at 7.

<sup>14</sup> *Cf. Nat’l Fed’n of Indep. Bus. v. Sebelius*, 567 U.S. 519, 581 (2012) (opinion of Roberts, C.J., joined by Breyer and Kagan, J.J.) (explaining states had “no real option” where “the financial ‘inducement’ Congress has chosen is much more than ‘relatively mild encouragement’—it is a gun to the head”).

The New Proposal asks the Commission to extend its authority beyond what the Communications Act allows.<sup>15</sup> For this reason alone, the New Proposal is fatally flawed. At the risk of beating a dead horse, however, the New Proposal suffers from numerous other maladies, which are explained below.

*The New Proposal Worsens the Holdout Problem.* Like the Original Proposal, the New Proposal offers no solution to the holdout problem and is economically unsound.<sup>16</sup> As the Commission recognized in the *NPRM*, an incentive auction is unlikely to work where multiple parties share equal access to the same spectrum.<sup>17</sup> The New Proposal fails to overcome this hurdle because it provides absolutely no positive incentive for all satellite operators to participate. Allowing more than 17,000 earth station registrants to participate would only exacerbate the problem—if it were permissible under the Communications Act, which it is not. The New Proposal *vastly* underestimates the herculean challenge of getting different sets of earth station registrants to agree on a purchase price with respect to each PEA. Without agreement, the spectrum clearing target continues to decrease until a Commission-mandated minimum is reached. The likelihood of non-agreement is high—if not guaranteed—and thus the 500 MHz of spectrum T-Mobile touts as an advantage of the New Proposal is illusory.<sup>18</sup>

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<sup>15</sup> By contrast, plain language of the Communications Act provides the Commission clear authority to adopt the Market-Based Approach, consistent with Section 309(j)(6)(E) of the Act. *See generally* Letter from Jennifer D. Hindin (Feb. 6, 2019). Notably, the Commission continues to endorse private negotiation as a means to avoid mutual exclusivity when it is in the public interest to do so under Section 309(j)(6)(E). *See Review of the Commission’s Rules Governing the 896-901/935-940 MHz Band*, DRAFT, Notice of Proposed Rulemaking, FCC-CIRC1903-02, ¶ 26 (Feb. 22, 2019) (citing Section 309(j)(6)(E) and multiple decisions of the D.C. Circuit Court of Appeals, on which basis it proposes to rely on a “market-driven approach . . . to take advantage of the speed and efficiency of voluntary realignment through private agreements between incumbents.”) (“*Draft 900 MHz NPRM*”); *Wireless Telecommunications Bureau Announces Process for Relicensing 700 MHz Spectrum in Unserved Areas*, Public Notice, DA 19-77, ¶¶ 53-54 (Feb. 12, 2019). T-Mobile’s focus on the legislative debate surrounding the Auction Reform Act of 2002, which left Section 309(j)(6)(E) untouched, serves as nothing but a smokescreen to ignore “that the Commission has broad authority to determine in the public interest what licensing scheme fits best with the characteristics of particular bands and services.” *Compare Draft 900 MHz NPRM*, ¶ 26 with Letter from Russell H. Fox, Counsel for T-Mobile, at 3-4 (Mar. 4, 2019).

<sup>16</sup> *See* Attachment, Letter from Paul Milgrom, Chairman, Auctionomics, Inc.

<sup>17</sup> *Expanding Flexible Use of the 3.7 to 4.2 GHz Band et al.*, Order and Notice of Proposed Rulemaking, 33 FCC Rcd 6915, ¶ 59 (2018) (“*NPRM*”).

<sup>18</sup> Mandating a minimum is also contrary to the Communications Act because it would result in incumbents being ousted from their spectrum without having volunteered to give up their rights. 47 U.S.C. § 309(j)(8)(G).

*The New Proposal Suffers Serious Technical Flaws.* In theory, the New Proposal would result in different amounts of spectrum cleared in adjacent PEAs. This ignores physics and how 5G service—and its resulting interference—will cross PEA borders.<sup>19</sup> Multiple different protection area criteria—up to 150 km—may be needed to protect earth stations from co-frequency 5G operations in an adjacent and nearby PEAs.<sup>20</sup> This daisy chain effect means that the actual available spectrum in any PEA could be driven by the lowest available spectrum in any adjacent PEA or nearby PEA with an earth station whose protection area radius would touch the PEA in question. For example, the Phoenix PEA that T-Mobile refers to in its New Proposal could be affected by the amount of spectrum sold in seven adjacent or nearby PEAs. Effectively, the amount of spectrum usable for 5G in at least some portion of the Phoenix PEA will be the lowest amount cleared in any of these adjacent or nearby PEAs. Bottom line: T-Mobile’s assertion that 500 MHz could be cleared in at least some PEAs is simply a pipedream. As one analyst correctly observed, the New Proposal would waste years to end up with the same spectrum cleared—200 MHz (including a guard band) —as the CBA would offer immediately after a Report and Order.<sup>21</sup> Fast 5G demands the Commission adopt the Market-Based Approach, not T-Mobile’s.

*Incumbent Users Will Lose Service and America Will Lose the Race to 5G.* The New Proposal also would evict many incumbent users, including television and radio programmers, from the C-band. The New Proposal proposes to clear a maximum of 500 MHz and a minimum of 300 MHz in some or all PEAs. As the CBA has shown, clearing that amount of spectrum would result in loss of C-band service for existing satellite customers and the more than 100 million American households they serve.<sup>22</sup>

T-Mobile baldly suggests that orphaned content providers and other C-band users could simply switch to fiber to accomplish their distribution goals. In fact, T-Mobile claims that “moving content to fiber could occur much faster than launching new satellites and would eliminate years from the clearing process.”<sup>23</sup> Spectrum clearing under the Market-Based Approach will take 18 months to three years to accomplish. Thus, for spectrum clearing under the New Proposal to

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<sup>19</sup> Moreover, satellite transmissions blanket large geographic areas such that differing amounts of spectrum cannot be cleared by satellite operators on a PEA-by-PEA basis.

<sup>20</sup> See C-Band Alliance, Further Technical Statement, at 4, attached to Letter from Jennifer D. Hindin (Mar. 4, 2019); Reply Comments of the C-Band Alliance, Technical Annex, at 7 (Dec. 7, 2018).

<sup>21</sup> See Tim Farrar (@TMFAssociates), Twitter, Replying to @mikedano, *et al.* (Feb. 19, 2019), available at <https://twitter.com/TMFAssociates/status/1097973269385248768>.

<sup>22</sup> See, e.g., Letter from Jennifer D. Hindin, Counsel for the C-Band Alliance (Feb. 7, 2019) (attaching transponder migration plans developed by SES and Intelsat showing that 200 MHz is the maximum amount of spectrum that can be cleared without denying C-band service to some current customers).

<sup>23</sup> T-Mobile Ex Parte at 6.

occur “years faster,” T-Mobile must assume that current C-band users can switch to fiber in two years or less. That is pure, unadulterated fantasy. Transitioning from C-band distribution to fiber (or other means) will be a *decades*-long process.<sup>24</sup> Fiber is not currently available in large swaths of the country,<sup>25</sup> and even where it is available, it can be prohibitively expensive.<sup>26</sup> Moreover, the record demonstrates strong opposition from video distributors and customers to a forced transition.<sup>27</sup> Thus, rather than win the race to 5G, the New Proposal will ensure that the United States falls hopelessly behind.

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<sup>24</sup> See, e.g., Comments of Comcast Corporation and NBCUniversal Media, LCC at 18 (“[V]ast amounts of new fiber would have to be deployed, not only to locations that currently have no fiber access but also costly redundant fiber runs for each headend currently relying on C-Band services, with each taking different routes to ensure path diversity. That would be a monumental and time-consuming undertaking, particularly in rural and remote areas with little or no fiber today, and would likely be prohibitively expensive in many areas.”); Comments of the C-Band Alliance at 11 (“[I]t would be cost prohibitive to move services delivered to all earth stations to alternative facilities outside urban areas, with traffic then backhauled to the current earth station location via fiber within the timeframe needed for the U.S. to gain global leadership in 5G.”)

<sup>25</sup> See, e.g., Reply Comments of the Content Companies at 4 (“[C]urrent fiber deployments are not nearly extensive enough to replace nationwide C-band usage (especially but not exclusively in rural areas), and are prone to fiber cuts during, for example, construction projects or severe weather events.”); Reply Comments of the Satellite Industry Association at ii (“Fiber networks are limited to the largest cities and cannot economically be extended to serve less populated areas, meaning that a required shift to fiber would deprive thousands of communities of access to programming and other services they receive today. Because fiber is also vulnerable to cuts, especially in emergency situations, sole reliance on fiber would compromise the reliability and resiliency of the nation’s key communications infrastructure.”); Comments of Cumulus Media Inc. and Westwood One, LLC at 5 (“[T]he coverage, reliability and cost make fiber virtually an impossible substitute for C-band. . . [T]he result would leave broadcasters and cable systems in thousands of smaller cities, towns, and rural areas with no affordable means to access the programming they now provide to their respective communities.”).

<sup>26</sup> See, e.g., Comments of Charter Communications, Inc. at 4 (“[F]iber delivery is vastly more expensive than Charter’s established earth stations, due to the need for multiple paths of redundancy, and the greatly increased expenses for installation and maintenance.”); Comments of GCI Communication Corp. at 12 (“[A] business case for fiber is challenging, if not impossible, due to the costs associated not just with deployment and repairs in difficult to access areas, but with the hardening required to make fiber a reliable telecommunications option in such areas.”).

<sup>27</sup> See, e.g., Comments of the National Association of Broadcasters at 5 (“Fiber is not a realistic option. Fiber is far from ubiquitous, particularly in rural America, and even where available it is unreliable and may not be an economically viable alternative.”); Comments of QVC, Inc. and HSN, Inc. at 4 (“The reliability, quality, cost efficiency, and ubiquitous coverage

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The New Proposal, like the Old Proposal, aims to block T-Mobile’s rivals’ access to mid-band spectrum to the detriment of the United States in the race to 5G. Both proposals would contravene the public interest and exceed the bounds of the Communications Act. The CBA encourages the Commission to jettison them and adopt the Market-Based Approach without delay.

Please contact the undersigned with any questions regarding this letter.

Respectfully submitted,



Henry Gola  
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Attachment

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offered by C-band is currently unmatched by fiber technologies or other satellite spectrum. . . . [F]iber simply is not available or is prohibitively costly to deploy [in rural and remote areas.]”); Comments of National Public Radio, Inc. at 8-9 (“Terrestrial delivery over the Internet is not an option for live content that must be available across the public radio network; and dedicated fiber is too expensive and in many rural areas of America simply non-existent.”); Comments of Global Eagle Entertainment at 6 (“Global Eagle simply cannot transition its existing services to fiber.”).



March 6, 2019

Federal Communications Commission  
445 12th Street, S.W.  
Washington, D.C. 20554

**Re: T-Mobile Ex Parte Notification of February 15, 2019  
GN Docket No. 18-122**

I have been asked by the C-Band Alliance (CBA) to analyze T-Mobile's recently revised auction proposal from an economic and auction design perspective. Separately, the CBA is responding to the T-Mobile "refined proposal" on legal, policy and engineering grounds. The short answer to T-Mobile's new filing from an economic and auction design perspective is that it is fundamentally flawed and simply not viable.

A crucial economic failure of T-Mobile's revised proposal relates to the first principle of reverse auctions, which states that any economically sound auction creates competition among bidders who supply *substitutes*. Transmitting and receiving signals are the opposite of substitutes: they are complements. Well-designed auctions can promote efficiency and price discovery when the auctioneer has a choice of alternative suppliers of the same or substitute products, enabling it to choose the one with the better combination of price and features, rejecting the other without taking anything of value from the loser. For complements, economic benefits flow only from coordination among suppliers, not from competition. There is no merit to any plan that calls for suppliers of complements to bid against one another.

Still, for sake of argument, let us suppose that there is a government mandate that transmission and reception are substitutes and that satellite companies and earth stations must bid against one another as such. Even then, the T-Mobile proposal would still not be viable. According to that proposal, in each PEA, the earth station decisions would be made by a consortium, which would need to agree to governance rules, key personnel, and divisions of any proceeds. There are thousands of earth stations and hundreds of PEAs. It is surpassingly unlikely that hundreds of consortia will form at all, let alone quickly enough to have the fast process needed to make a sizable amount of mid-band spectrum available for 5G.

For the sake of further argument and piling uneconomic assumption upon uneconomic assumption, let me continue by imagining that in addition to the legal mandate, the consortium problem could somehow be addressed successfully, too. Would T-Mobile's auction proposal then be a viable way

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to run a fast and effective auction? Even in that case, the answer is again no. The T-Mobile proposal raises two kinds of combinatorial issues without resolving either one.

The first of these is for the satellite consortium, which has plans to reduce the bandwidth required for its business by launching new satellites to serve CONUS. If there were ever a fact situation that called for a combinatorial auction, this is it. The consortium does not incur its main costs to reduce its usage of frequencies in each PEA separately; it incurs them to reduce its usage in all PEAs together.

The second issue is on the earth station side. Radio interference for satellite operations does not confine itself to PEAs. To have effective use of the spectrum in an entire PEA, mobile operations will likely interfere with the reception of satellite broadcasts in nearby PEAs as well. Depending on how rights are prioritized, this creates a combinatorial problem for either buyers or sellers. Those rights would need to be settled and the participants' needs evaluated and somehow incorporated into a new auction design. This, alone, would be a difficult legal, political and economic problem that would likely take years to resolve before any implementation could even begin.

Finally, T-Mobile's proposal doubles down on its first one, so the difficulties described in this letter add to the ones that I described in my January letter. T-Mobile's new proposal at p.8 says it "meets the fundamental criteria for incentive auctions" described in my January letter. This is simply not correct. Like T-Mobile's earlier proposal, this one requires that satellite operators form a new decision-making consortium with all the perils that involves. T-Mobile's allowable outcomes would all devastate existing businesses, inviting conflict that would likely postpone the transition of any portion of this band to 5G use for many years.

If the goal is to promote a fast transition of a portion of the C-band to 5G uses, T-Mobile's "refined proposal" is a step in the wrong direction.

Respectfully submitted,



Paul Milgrom

Chairman, Auctionomics, Inc.