

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

In the Matter of	)	
	)	
International Bureau and Wireless	)	GN Docket No. 18-122
Telecommunications Bureau Seek Focused	)	RM-11791
Additional Comment in 3.7-4.2 GHz Band	)	RM-11778
Proceeding	)	

**COMMENTS OF T-MOBILE USA, INC.**

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T-Mobile USA, Inc. (“T-Mobile”)<sup>1/</sup> submits these comments in response to the *Public Notice* in the above-referenced proceedings that requests focused additional comment on proposals for enabling additional terrestrial use of the 3.7-4.2 GHz band (“C-band”).<sup>2/</sup> The Commission has clear authority to convert the C-band to terrestrial wireless use and to implement an incentive auction.

**I. INTRODUCTION AND SUMMARY**

T-Mobile has been a leader in this proceeding, proposing that the Commission employ its incentive auction authority to license the C-band for terrestrial wireless services.<sup>3/</sup> Among its many benefits, an incentive auction would best promote the public interest by:

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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> See *International Bureau and Wireless Telecommunications Bureau Seek Focused Additional Comment in the 3.7-4.2 GHz Band Proceeding*, Public Notice, DA 19-385 (rel. May 3, 2019) (“*Public Notice*”).

<sup>3/</sup> See Comments of T-Mobile USA, Inc., GN Docket No. 18-122 *et al.* (filed Oct. 29, 2018); Reply Comments of T-Mobile USA, Inc., GN Docket No. 18-122 *et al.* (filed Dec. 11, 2018); Letter from Steve B. Sharkey, Vice President, Government Affairs, Technology and Engineering Policy, T-Mobile, to Ms. Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122 (filed Feb. 15, 2019) (“T-Mobile Feb. 15 *Ex Parte* Letter”).

- Potentially converting up to 500 megahertz of C-band spectrum for terrestrial services where it is not required for satellite operations and preserving that spectrum for satellite operations where it is needed;
- Using an open, transparent, and market-based process to select licensees for the spectrum, consistent with the Communications Act (the “Act”);
- Returning value to U.S. taxpayers upon the conversion of the spectrum for terrestrial use; and
- Taking into consideration the rights of both incumbent satellite space station operators and earth station operators, including accommodating their operations post-auction.

The *Public Notice* solicits comment on the rights of satellite operators and earth station operators as well as the Commission’s authority to modify those rights to permit terrestrial use of the C-band. As explained further below, terrestrial use of the C-band will most directly affect the *reception* of C-band signals by earth station operators, and satellite space station licenses will not require modification. Therefore, the decisions in this proceeding need not be driven by legal requirements to protect satellite space station operators from harmful interference.

As T-Mobile previously explained,<sup>4/</sup> the Commission has ample authority under Section 316 of the Act to modify the authorizations of earth station users in order to implement a C-band incentive auction. While T-Mobile agrees that the Commission’s Section 316 authority does not allow it to make fundamental changes to a licensee’s authorization, there would not be fundamental changes to their operations in this case. If an earth station operator’s authorization

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<sup>4/</sup> See Letter from Russell H. Fox, Mintz, Counsel to T-Mobile USA, Inc., to Ms. Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122 (filed Apr. 11, 2019) (“T-Mobile Apr. 11 *Ex Parte* Letter”); Letter from Russell H. Fox, Mintz, Counsel to T-Mobile USA, Inc., to Ms. Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122 (filed Mar. 19, 2019) (“T-Mobile Mar. 19 *Ex Parte* Letter”).

is modified under a C-band incentive auction by, for example, reducing the amount of spectrum on which it could receive transmissions or by relocating it to an alternative geographic area or facilities, it could still continue to operate as it does today. Earth station operators would be provided with comparable facilities, which is not required by Section 316 of the Act, but would further demonstrate that there would be no fundamental change to their operations.

Finally, while some parties suggest that the Commission cannot conduct an incentive auction of the C-band where satellite operators and earth station users compete in a reverse auction, the Commission has unambiguously stated the opposite. Section 309(j)(8)(G) of the Act appropriately authorizes the Commission to conduct a C-band incentive auction, including by having satellite space station operators compete with earth station operators in a reverse auction, and is the more appropriate vehicle for allowing any terrestrial use of the C-band.

## **II. THE COMMISSION WILL NOT BE REQUIRED TO EXERCISE ITS SECTION 316 AUTHORITY TO MODIFY THE RIGHTS OF SATELLITE OPERATORS**

The Bureaus seek comment on the extent to which space station operators have enforceable interference protection rights against co-primary terrestrial operations in the C-band.<sup>5/</sup> The Bureaus note that T-Mobile has suggested that, as a technical matter, new, flexible-use terrestrial operations would not suffer harmful interference from downlink signals but could cause harmful interference to licensed or registered receive-only earth stations in the band.<sup>6/</sup> The Bureaus further ask what obligations, if any, Section 316 of the Communications Act would impose on the Commission with respect to space station operators if the Commission were to authorize new terrestrial operations in the C-band.<sup>7/</sup>

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<sup>5/</sup> See *Public Notice* at 1-3.

<sup>6/</sup> See *id.* at 3.

<sup>7/</sup> See *id.*

The Bureau's assessment of T-Mobile's technical assertion is accurate. The C-band is used for space-to-earth transmissions from geostationary orbit ("GSO") satellites to terrestrial earth station receivers. Due to the propagation losses over the distance the satellite signal travels – across approximately 22,000 miles above mean sea level – the in-band power of the in-orbit GSO satellite transmissions is very low once it reaches the ground, and out-of-band emissions are even lower. As a result, interference to terrestrial mobile operations from satellite transmissions either in-band or in adjacent spectrum is highly unlikely. Therefore, T-Mobile has explained that the ability of terrestrial licensees to use the C-band will depend on the need to protect earth station operations, not space-to-earth transmissions.<sup>8/</sup> Indeed, as others have observed,<sup>9/</sup> the Commission essentially recognized as much by asking whether, instead of clearing and compensating satellite space station operators, earth station operators could instead be cleared and compensated for relinquishing their access to the C-band.<sup>10/</sup>

Accordingly, the Commission will likely not be required to exercise its authority under Section 316 with respect to authorizations held by satellite operators in order to enable terrestrial use of the C-band.<sup>11/</sup> As T-Mobile explained, if the Commission conducts an incentive auction

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<sup>8/</sup> See T-Mobile Apr. 11 *Ex Parte* Letter at 8; T-Mobile Mar. 19 *Ex Parte* Letter at 6; T-Mobile Feb. 15 *Ex Parte* Letter at 4.

<sup>9/</sup> See Letter from Pantelis Michalopoulos and Georgios Leris, Steptoe & Johnson LLP, Counsel to American Cable Association, to Ms. Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122, at 2 (filed Feb. 12, 2019) ("ACA Feb. 12 *Ex Parte* Letter").

<sup>10/</sup> See *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, Order and Notice of Proposed Rulemaking, 33 FCC Rcd 6915, ¶ 65 (2018).

<sup>11/</sup> If the Commission believes it necessary to modify satellite operators' authorizations to limit the spectrum on which they can transmit, it can do so using its Section 316 authority under the same conditions discussed below with respect to modification of earth station authorizations. That modification may result in a *reduction* of rights, including a reduction in the amount of spectrum a licensee may access. Nevertheless, this potential use of Section 316 is distinct from the C-Band Alliance's incorrect assertion that the Commission may use its authority under Section 316 to modify satellite operator licenses to add terrestrial authority that may then be sold to third parties. See Comments of the C-Band Alliance, GN Docket No. 18-122 *et al.*, at 31-32 (filed Oct. 29, 2018). The C-Band

of the C-band, satellite operators could continue to transmit using all 500 megahertz of C-band spectrum and serve earth stations in locations where they will continue to exist.<sup>12/</sup> If a C-band incentive auction resulted in satellite operators agreeing to relinquish some of the 500 megahertz of spectrum across the country, the Commission *could* modify the satellite space station operators' licenses to reflect their reduced spectrum rights, but it would not be required to so – any decision by a satellite space station operator to relinquish its spectrum usage rights in the C-band would be *voluntary*.

### **III. THE COMMISSION MAY USE ITS SECTION 316 AUTHORITY TO MODIFY THE AUTHORIZATIONS OF EARTH STATION OPERATORS**

The Bureaus ask about the interference protection rights of licensed or registered receive-only earth station users, including whether earth station users have licensed spectrum usage rights and what obligations, if any, Section 316 of the Communications Act imposes on the Commission vis-à-vis earth station operators.<sup>13/</sup> The Bureaus note that Section 316 of the Act gives the Commission authority to modify entire classes of station licenses by rulemaking or adjudication, but that this authority has been interpreted not to extend to any “fundamental change” to the terms of a license.<sup>14/</sup> The Bureaus also ask whether Section 316 requires the availability of comparable facilities.<sup>15/</sup>

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Alliance's suggestion fails because such a change would be considered fundamental and, as explained below, is not permitted under Section 316 of the Act.

<sup>12/</sup> See T-Mobile Apr. 11 *Ex Parte* Letter at 8.

<sup>13/</sup> See *Public Notice* at 5.

<sup>14/</sup> See *id.* at 3.

<sup>15/</sup> See *id.* at 4.

**A. Registered Receive-Only Earth Stations Have Spectrum Usage Rights That May Be Modified Pursuant to Section 316 of the Act**

T-Mobile has explained that authorizations for receive-only earth stations constitute “licenses” under the Communications Act and Commission precedent.<sup>16/</sup> Their authorizations allow for the use of an apparatus for communications, allowing them to fall squarely within the definition of a “license.”<sup>17/</sup> Moreover, any efforts by the Commission to streamline the rules applicable to earth station operators’ authorizations have not altered or reduced those rights.<sup>18/</sup> As ACA has observed, “[e]arth station users have rights to use the [C-band] spectrum that are equal to those of satellite operators”<sup>19/</sup> and, while the Commission streamlined rules applicable to C-band earth station operators, “it did so simply because receive-only earth stations present no potential for interfering with the rights of others, not because the rights of earth station users have somehow lesser dignity than those of satellite operators.”<sup>20/</sup>

As licenses, earth station operators’ authorizations are subject to Section 316 of the Act, which states that “[a]ny station license or construction permit may be modified by the Commission either for a limited time or for the duration of the term thereof, if in the judgment of the Commission such action will promote the public interest, convenience, and necessity . . . .”<sup>21/</sup> T-Mobile previously explained that the Commission has broad discretion in exercising its Section 316 authority, including the ability to modify, as necessary, the licenses of earth station

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<sup>16/</sup> See T-Mobile Mar. 19 *Ex Parte* Letter at 2-5; T-Mobile Apr. 11 *Ex Parte* Letter at 5-7.

<sup>17/</sup> See T-Mobile Mar. 19 *Ex Parte* Letter at 2; T-Mobile Apr. 11 *Ex Parte* Letter at 5-6.

<sup>18/</sup> See T-Mobile Mar. 19 *Ex Parte* Letter at 3-4.

<sup>19/</sup> ACA Feb. 12 *Ex Parte* Letter at 2.

<sup>20/</sup> *Id.* at 2 n.2; see also *Public Notice* at 5 n.24.

<sup>21/</sup> 47 U.S.C. § 316(a)(1).



operators in the C-band in order to implement an incentive auction of that spectrum.<sup>22/</sup> In particular, T-Mobile demonstrated that the Commission’s use of its Section 316 authority to modify licenses after a C-band incentive auction would serve the public because it would (i) make critical mid-band spectrum available to drive the significant economic engine that Fifth Generation (“5G”) wireless networks would create,<sup>23/</sup> (ii) provide an open and transparent process to allow the market to decide the maximum efficient amount of spectrum that should be reallocated for mobile broadband deployment, (iii) account for the differential value of the spectrum in terrestrial and satellite use in different areas by making spectrum available on a market-by-market basis, (iv) allow participation by *all* interested stakeholders, and (v) benefit U.S. taxpayers by returning a portion of the proceeds to the U.S. Treasury.<sup>24/</sup>

**B. Modifications Under a C-Band Incentive Auction Would Not Result in a Fundamental Change to Those Rights**

T-Mobile agrees with the Bureaus that Section 316 of the Act confers broad authority to the Commission to modify licenses, provided that the modification does not constitute a “fundamental change.” However, any exercise of the Commission’s Section 316 authority to modify licenses under a C-band incentive auction would *not* result in a “fundamental change” of incumbents’ licenses. As T-Mobile has pointed out, when exercising its Section 316 authority to relocate incumbents without affecting a fundamental change to their authorizations, the

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<sup>22/</sup> See T-Mobile Apr. 11 *Ex Parte* Letter at 1-4.

<sup>23/</sup> Innovative next-generation technologies will promote job growth and drive economic progress. A recent study conducted by Analysis Group determined that making 400 megahertz of licensed mid-band spectrum between 3.45 GHz and 4.2 GHz available for 5G networks “over a seven-year period will result in \$150 billion in wireless investments, 1.3 million new jobs on a direct and spillover effect basis, and a contribution of \$274 billion to America’s [Gross Domestic Product (‘GDP’)].” David W. Sosa and Greg Rafert, *The Economic Impacts of Reallocating Mid-Band Spectrum to 5G in the United States*, Analysis Group, at 1 (Feb. 2019), <https://api.ctia.org/wp-content/uploads/2019/02/The-Economic-Impacts-of-Reallocating-Mid-Band-Spectrum-to-5G-1.pdf>.

<sup>24/</sup> See T-Mobile Apr. 11 *Ex Parte* Letter at 7; see also generally T-Mobile Feb. 15 *Ex Parte* Letter.

Commission has expressly provided that licensees need not receive the exact same rights as prior to the modification.<sup>25/</sup> To the contrary, the Commission has at times *reduced* a licensee's rights when exercising its Section 316 authority, including by reducing the amount of spectrum on which a licensee may operate, without creating a fundamental change in the licensee's rights.<sup>26/</sup> In the past, the Commission exercised its Section 316 authority to relocate a licensee from the 800 MHz band to spectrum in the 1.9 GHz band – without creating a fundamental change.<sup>27/</sup> In doing so, it noted that “the D.C. Circuit has found that reassignments to new spectrum are not fundamental changes to the original licenses that themselves trigger the requirements for license revocation and reissuance.”<sup>28/</sup>

Under a C-band incentive auction, earth station users may choose to relinquish their spectrum usage rights or remain in the C-band.<sup>29/</sup> Those that remain may have their authorizations modified to reduce the amount of spectrum in which they could claim the right to interference protection or to reflect their relocation to a different geographic area or alternative transmission media. But, as noted above, just because an earth station operator has its spectrum reduced or is relocated to a different geographic area or alternative transmission media does not mean that there would be a fundamental change to its authorization. As T-Mobile previously explained, earth station operators are authorized to receive on all 500 megahertz of C-band spectrum, but generally only use a fraction of the available bandwidth. Thus, if an earth station

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<sup>25/</sup> See T-Mobile Apr. 11 *Ex Parte* Letter at 4.

<sup>26/</sup> See *id.* at 4-5.

<sup>27/</sup> See *Improving Public Safety Communications in the 800 MHz Band et al.*, Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, 19 FCC Rcd 14969 (2004).

<sup>28/</sup> *Id.* ¶ 69 (citing *Community Television, Inc. v. FCC*, 216 F.3d 1133, n. 229 (D.C. Cir. 2000)); see also T-Mobile Apr. 11 *Ex Parte* Letter at 2.

<sup>29/</sup> See T-Mobile Apr. 11 *Ex Parte* Letter at 8.

operator's authorization is modified pursuant to a C-band incentive auction to reduce the amount of spectrum on which it could receive transmissions and claim interference protection, there would be no material impact to its operations. Similarly, if an earth station is relocated to a different geographic area or alternative transmission media, such as fiber, it would still be able to operate as it does today.

**C. Incumbents Would Be Provided With Comparable Facilities Under a C-Band Incentive Auction**

Section 316 of the Act does not *require* that, in modifying licenses, the Commission ensure that licensees are authorized for comparable facilities – as noted above, the Commission need only determine that there is no fundamental change to a licensee's authorization. However, in assessing whether the modification of a license under Section 316 of the Act results in a fundamental change, the Commission can choose to evaluate whether the licensee will be provided with comparable facilities. If the Commission ensures that an incumbent licensee has comparable facilities after a C-band incentive auction, that licensee's ability to operate will not be fundamentally changed, consistent with Section 316's requirements. As noted above, even if the spectrum on which an earth station operator receives its transmission is reduced, it would still have a comparable amount on which it could operate. Moreover, if an earth station operator is relocated to a different geographic area or alternative transmission media such as fiber, it would still have comparable facilities to continue its operations. As T-Mobile explained, fiber is widely available today and can be used to provide the reliable delivery of content.<sup>30/</sup> And because earth station operators would be compensated for any costs related to relocation, they would bear no

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<sup>30/</sup> See Letter from Steve B. Sharkey, Vice President, Government Affairs, Technology and Engineering Policy, T-Mobile, to Ms. Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122 (filed June 21, 2019).

additional expense, leaving them no worse off than they are today. In all these cases, licensees would be provided with comparable facilities and there would be no fundamental change to their licenses, consistent with Section 316 of the Act.

#### **IV. SECTION 309(j)(8)(G) OF THE ACT PROVIDES THE COMMISSION WITH SUFFICIENT, AND THE MORE APPROPRIATE, AUTHORITY TO CONDUCT A C-BAND INCENTIVE AUCTION**

Citing T-Mobile's proposal, the Bureaus ask whether the Commission's incentive auction authority allows the Commission to structure a reverse auction in which satellite operators and licensed or registered receive-only earth station users compete to relinquish their spectrum usage rights.<sup>31/</sup> They also ask whether the Commission has other statutory authorities that would enable it to authorize or require payments to licensed or registered receive-only earth station operators if an incentive auction approach is unavailable.<sup>32/</sup>

The Commission's authority to conduct incentive auctions under Section 309(j)(8)(G) enables the Commission to structure a reverse auction for the C-band where satellite operators and earth station users compete to relinquish their spectrum usage rights. Section 309(j)(8)(G) of the Act authorizes the Commission to encourage a licensee to voluntarily relinquish some or all of its spectrum in an incentive auction so long as: (i) the Commission conducts a reverse auction; and (ii) there "at least two competing licensees in the reverse auction."<sup>33/</sup> The Commission has determined that the requirement to have competing licensees would be satisfied if at least two licensees that are not commonly controlled participated in the incentive auction.<sup>34/</sup>

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<sup>31/</sup> See *Public Notice* at 6.

<sup>32/</sup> See *id.*

<sup>33/</sup> 47 U.S.C. § 309(j)(8)(G).

<sup>34/</sup> See *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd 6567, ¶¶ 413-15 (2014) ("*BIA Report and Order*"); *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, Fourth Report and Order, 33 FCC Rcd 12168,

As the Commission has explained, all participants in a reverse auction “will compete to receive incentive payments from the same limited source – the aggregate proceeds of the forward auction.”<sup>35/</sup>

A C-band incentive auction would satisfy this requirement because it would involve at least two incumbent licensees – whether individual satellite space station operators or individual earth station operators – that are not commonly controlled. And they would compete for payments from the same limited source: forward auction proceeds. Allowing two *groups* of incumbents to compete against one another – *i.e.*, satellite operators as a group and earth station users as a group – in a C-band incentive auction would not change this result.<sup>36/</sup> Because the C-band can be cleared if *either* satellite space station operators or earth station operators as a group agree to relinquish their spectrum usage rights, both groups necessarily compete for purposes of relinquishing their rights and clearing the band.

While other statutory provisions may also provide the Commission the ability to encourage incumbents to relinquish their spectrum usage rights in the C-band,<sup>37/</sup> Section 309(j)(8)(G) directly evidences Congressional intent that any auction in which incumbents are incentivized to relinquish their spectrum usage rights should be conducted by the Commission

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¶ 9 (2018) (“*2018 Spectrum Frontiers Order*”) (“[A]s long as more than one incumbent licensee commits to relinquish its spectrum usage rights, there will be two licensees competing in the reverse auction portion of the incentive auction.”).

<sup>35/</sup> *BIA Report and Order* ¶ 414.

<sup>36/</sup> *See* T-Mobile Feb. 15 *Ex Parte* Letter at 7-8.

<sup>37/</sup> *See* Letter from Elizabeth Andrion, Senior Vice President, Regulatory Affairs, Charter Communications, to Ms. Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122 *et al.*, at 5-6 (filed Feb. 22, 2019); Letter from Scott Blake Harris and V. Shiva Goel, Harris, Wiltshire & Grannis LLP, Counsel to the Small Satellite Operators, to Ms. Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122 *et al.*, at 3-4 (filed Mar. 25, 2019).

under that authority.<sup>38/</sup> Indeed, if Congress believed the Commission already had statutory authority to encourage incumbents to relinquish their spectrum usage rights, it would not have enacted Section 309(j)(8)(G). This interpretation is further bolstered by the Commission's recent decision to conduct an incentive auction for the 39 GHz band, along with the Upper 37 GHz and 47 GHz bands.<sup>39/</sup> While the Commission could have employed other statutory authorities to auction the spectrum, or even permitted incumbents in the 39 GHz band to engage in the same type of private sale that the C-Band Alliance has proposed, it did not – it appropriately exercised its authority under Section 309(j)(8)(G) to conduct an incentive auction.

## **V. CONCLUSION**

The C-band is critical mid-band spectrum that holds the promise of promoting the Nation's leadership in next-generation wireless technologies. It is therefore vital that the Commission get the policies right for this spectrum. T-Mobile has demonstrated that an incentive auction is the most legally sound and efficient mechanism by which the Commission should license terrestrial operations in the C-band. The Commission should therefore take prompt action to implement a C-band incentive auction so that the American people can fully realize the benefits that this spectrum has to offer.

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<sup>38/</sup> See Letter from Russell H. Fox, Mintz, Counsel to T-Mobile USA, Inc., to Ms. Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122, at 9-10 (filed Mar. 4, 2019).

<sup>39/</sup> See 2018 *Spectrum Frontiers Order* ¶¶ 7-10.

Respectfully submitted,

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