

June 11, 2020

EX PARTE PRESENTATION

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

Re: IBFS File No SAT-MOD-20200417-00037; RM-11768, *MVDDS 5G Coalition Petition for Rulemaking to Permit MVDDS Use of the 12.2-12.7 GHz Band for Two-Way Mobile Broadband Service*; GN Docket No. 17-183, *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*

Dear Ms. Dortch:

Space Exploration Holdings, LLC (“SpaceX”) is proposing that the FCC radically change existing satellite authorizations for its proposed “Starlink” non-geostationary orbit fixed-satellite service (“NGSO FSS”) system.¹ Granting the extraordinary modifications SpaceX seeks would irreparably harm America’s future 5G leadership by impairing the multichannel video distribution and data service (“MVDDS”) operating in the 12.2-12.7 GHz band (“12 GHz Band”). This band, exhaustively licensed and purchased via competitive FCC auction, is a unique and contiguous 500 megahertz strategic asset—the last remaining terrestrially-licensed spectrum between 6 GHz and 24 GHz capable of being harnessed for the nation’s 5G future. Each FCC commissioner has stressed the importance of freeing additional 5G spectrum and ensuring American leadership in 5G. A key pillar of Chairman Pai’s 5G FAST plan—Facilitate America’s Superiority in 5G Technology—is finding large swaths of spectrum that can be deployed in the near term in order to ensure the nation’s competitive edge. The FCC, in the Chairman’s words, is taking “an aggressive, all-of-the-above approach here: we’re freeing up high-, mid-, and low-band spectrum for 5G.”²

The 12 GHz Band is *the* timely and compelling solution to meet America’s burgeoning need for 5G spectrum. It provides a unique opportunity for channel blocks of 100 megahertz or more that can be rapidly deployed for 5G services. Critically, it has *no* federal encumbrances. That is why, nearly four years ago, the MVDDS 5G Coalition (the “Coalition”) filed a Petition for Rulemaking seeking to reevaluate the service rules in the 12 GHz Band and better align them to support terrestrial, two-way 5G services.³ Under the cloak of an ostensibly routine license

¹ See Application for Modification of Authorization for the SpaceX NGSO Satellite System, IBFS File No. SAT-MOD-20200417-00037 (filed Apr. 17, 2020) (“SpaceX 2020 Modification Application”).

² Remarks of FCC Chairman Ajit Pai at the Information and Innovation Foundation (Feb. 6, 2020), <https://bit.ly/2YpwaZY>.

³ See Petition of MVDDS 5G Coalition for Rulemaking, RM-11768 (filed Apr. 26, 2016) (“5G Petition”). The Coalition includes a cross-section of MVDDS and direct broadcast satellite (“DBS”) licensees holding 212 of the 213 MVDDS authorizations in the 12 GHz Band.

modification, however, SpaceX would have the Commission suffocate the 5G Petition and make a *de facto* policy decision of enormous strategic significance, potentially permanently eclipsing U.S. 5G leadership.

The SpaceX application thus confronts the Commission with stark policy questions: (1) whether 5G superiority remains an FCC priority; and (2) whether the 12 GHz Band should be part of the solution or impaired for the foreseeable future. SpaceX's currently licensed NGSO satellite system may be compatible with 5G terrestrial broadband operations. But SpaceX's proposed system redesign likely cannot coexist with 5G terrestrial broadband. On the contrary, SpaceX's proposed license modification would turn the 12 GHz Band into a 5G wasteland for the foreseeable future.

SpaceX already has full access to 14,050 megahertz of spectrum *outside* of the 12 GHz Band to conduct its potential future operations. That spectrum grant is more spectrum than is commercially available for *all* licensed 5G services in low-band and mid-band range. None of that enormous swath of spectrum is implicated here. Moreover, the Commission has already recognized the important interests of MVDDS licensees when it put SpaceX on notice that it should not rely on access to the 12 GHz Band (a mere 3.6 percent of SpaceX's total spectrum authorization)⁴ pending a future rulemaking. If the Commission is to evaluate SpaceX's request for system modification it could easily do so across 96.4% of their spectrum while preserving this vital resource for 5G services in the 12 GHz Band.

In the final analysis, the Commission's all-of-the-above 5G spectrum strategy has been a regulatory success that will lead to economic and national security gains for decades to come. But SpaceX's proposed modification seeks to prioritize its theoretical and highly uncertain business model ahead of any Commission consideration of allocating the 12 GHz Band for 5G. This puts the cart before the horse. The Commission can and must first resolve whether it seeks to allocate the 12 GHz Band for 5G in support of the Chairman's stated priority before it proceeds with SpaceX's proposed license modification. Now is the time to initiate a notice of proposed rulemaking ("NPRM") on the future of the 12 GHz Band so that this critical resource can be unleashed to meet the Commission's urgent 5G goals.

⁴ SpaceX received authorization for approximately 14 gigahertz of spectrum without having to undergo competitive bidding and has not changed its demand for these public resources in its latest conceptual remake of its proposed satellite system. *See, e.g., Space Exploration Holdings, LLC Request for Modification of the Authorization for the SpaceX NGSO Satellite System*, Order and Authorization, 34 FCC Rcd 12307 (2019) ("SpaceX 2019 Authorization"); *Space Exploration Holdings, LLC Application for Approval for Orbital Deployment and Operating Authority for the SpaceX V-band NGSO Satellite System*, Memorandum Opinion, Order and Authorization, 33 FCC Rcd 11434 (2018); SpaceX 2020 Modification Application, Frequency Bands Requested.

I. SPACEX'S PROPOSED MODIFICATION WOULD UNDERMINE 5G SERVICES IN THE 12 GHZ BAND.

SpaceX has been on notice that the Commission may make changes to the 12 GHz Band such that the company should not rely upon access to it for its planned system. In June of 2017, before SpaceX had launched a single satellite, the FCC warned NGSO operators that by using the 12 GHz Band they assume the risk that future Commission action to support greater terrestrial use of the band could result in constraints on their operations:

[T]oday's conditional grant of OneWeb's request does not preclude the Commission from initiating a rulemaking proceeding regarding the 12.2-12.7 GHz band on its own motion or in response to a petition for rulemaking, including the MVDDS Coalition's pending Petition, in the manner that best serves the public interest. Nonetheless, we note that OneWeb's request includes several additional frequency bands, such that even if NGSO FSS systems were precluded entirely from the 12.2-12.7 GHz band, OneWeb would still retain a measure of flexibility to provide its proposed services. *Accordingly, any investments made toward operations in this band by OneWeb in the United States assume the risk that operations may be subject to additional conditions or requirements as a result of such Commission actions.*⁵

The Commission inserted a similar condition in SpaceX's authorization, which reserves the right to initiate any future rulemaking in the 12 GHz Band.⁶

Despite these conditions on its authorizations, SpaceX has sought to significantly modify its NGSO system operating in the Ku- and Ka-band frequencies. Among other things, SpaceX proposes to: (1) lower the altitude of 2,824 of its 4,409 satellites by as much as 785 km; (2) double the number of satellites that may communicate with any gateway earth station; (3) widen the elevation angles of user terminals and gateways in manner that would greatly increase the area of the sky in which SpaceX's satellites will be visible. These proposed modifications would materially worsen the risk of orbital collision and increase the likelihood of harmful interference between terrestrial and satellite systems, including in the 12 GHz Band where RS Access currently operates hundreds of user links across 60 U.S. markets.⁷

The latest raft of proposed changes would render the SpaceX constellation virtually unrecognizable from the system the Commission originally authorized in 2018.⁸ Through a

⁵ *WorldVu Satellites Limited Petition for a Declaratory Ruling Granting Access to the U.S. Market for the OneWeb NGSO FSS System*, Order and Declaratory Ruling, 32 FCC Rcd 5366 ¶ 6 (2017) (emphasis added).

⁶ *See Space Exploration Holdings, LLC Application For Approval for Orbital Deployment and Operating Authority for the SpaceX NGSO Satellite System, et al.*, Memorandum Opinion, Order, and Authorization, 33 FCC Rcd 3391 n.88, ¶ 40(r) (2018) ("SpaceX 2018 Authorization") (conditioning approval on any future changes to the 12 GHz Band).

⁷ *See, e.g.*, MDS Operations, Inc., Substantial Service Showing Supplement, ULS File No. 0008742311 (filed July 26, 2019) ("MDS Supplement").

⁸ *See* SpaceX 2018 Authorization.

series of successive modification applications, each of which SpaceX characterized as “modest” or a mere “adjustment,”⁹ the company has orchestrated a dramatic transformation of its system and the corresponding interference environment that co-frequency licensees must accommodate. Following its original authorization, SpaceX obtained permission in April 2019 to modify its system to reduce the altitude of 1,584 satellites from 1,150 km to 550 km.¹⁰ Then, SpaceX sought another modification, which the Commission granted in December 2019, to triple the number of orbital planes and to operate satellites in these new orbital planes.¹¹ In the application now before the Commission, SpaceX seeks to complete a total reconfiguration of its system and to operate entirely at 540-570 km instead of the higher altitudes it originally proposed.

SpaceX’s proposed modifications deserve meaningful scrutiny from the Commission given the likelihood of harmful interference between space and terrestrial licensees, including in the 12 GHz Band. In particular:

- Widening the aperture of gateway and user beams from a minimum elevation angle of 40 degrees to a minimum elevation angle of 25 degrees would effectively block future 5G terrestrial operations by greatly increasing the probability that SpaceX subjects itself to harmful interference from terrestrial operations.¹² Thus, SpaceX’s modification would preemptively block large swaths of the country in which terrestrial licensees can site their future 5G base stations.
- Doubling the number of satellites operating simultaneously with a gateway terminal would make NGSO FSS sharing with the SpaceX system substantially more difficult because eight active satellite links will block out twice as much sky as four.
- SpaceX’s proposed altitudes and overlapping orbital shells, meanwhile, will increase the number of in-line interference events and, given the wide fifteen-kilometer variation in orbital range, materially worsen the probability of collision within shells of SpaceX’s own system that are stacked just ten kilometers from one another as well as with the space stations of other systems with similar orbits.

⁹ See, e.g., SpaceX 2020 Modification Application, Narrative at i, iii; Application for Modification of Authorization for the SpaceX NGSO Satellite System, IBFS File No. SAT-MOD-20181108-00083, Narrative at i, ii, 9 (filed Nov. 8, 2018).

¹⁰ See *Space Exploration Holdings, LLC Request for Modification of the Authorization for the SpaceX NGSO Satellite System*, Order and Authorization, 34 FCC Rcd 2526 (2019).

¹¹ See SpaceX 2019 Authorization.

¹² SpaceX previously proposed temporary operations with a 25 degree elevation angle during only the initial phases of system operation. See Application for Modification of Authorization for the SpaceX NGSO Satellite System, IBFS File No. SAT-MOD-20181108-00083, Technical Attachment at 5 (filed Nov. 5, 2018) (“SpaceX may periodically use a minimum elevation angle as low as 25 degrees for this initial shell. Then, as further satellites are deployed to populate the remainder of the constellation, SpaceX will revert to a 40 degree minimum elevation angle for all user and gateway beams.”). Now SpaceX proposes to make this fleeting, one-time reduction of system elevation angle a permanent feature of the system.

These proposed modifications would severely impact the investment-backed expectations of the primary licensees that originally acquired their spectrum in two separate Commission-administered auctions and currently operate terrestrial services in the 12 GHz Band under the MVDDS rules.¹³ The MVDDS licensees have invested significant resources to deploy a wide range of new services in the 12 GHz Band.¹⁴ These new offerings include supplemental downlink capacity for broadband services to schools and public safety training facilities, electronic billboards, remote video monitoring, and secure one-to-many communications.¹⁵ The MVDDS auction winners have asked the Commission to update the outdated service rules from 2002 and for permission to deploy two-way, 5G broadband services to make greater use of this licensed spectrum. By making itself more susceptible to interference by reducing its minimum elevation angles, however, SpaceX would prevent MVDDS licensees from offering terrestrial 5G services.

To coexist with terrestrial services, NGSO earth stations must maintain a minimum elevation angle that is sufficiently high above the horizon to avoid receiving harmful interference from terrestrial operations. A low minimum elevation angle on an NGSO receiver increases antenna gain and makes the NGSO receiver more vulnerable to interference from terrestrial sources. SpaceX's proposed modification does precisely that: SpaceX would make its user terminals more vulnerable to future terrestrial operations by dramatically reducing their minimum elevation angles to the horizon. Were the Commission to grant SpaceX's application, future 5G licensees in the 12 GHz Band would have virtually nowhere to site their base stations without tripping over SpaceX's sensitive receivers. Approval of the SpaceX Modification would eviscerate the co-primary nature of terrestrial services, give SpaceX exclusive dominion over the entire band, and sacrifice American 5G leadership for an unproven business plan.

One solution to ensure the continued feasibility of both NGSO FSS and terrestrial 5G is simply to continue to allow SpaceX to operate consistent with its existing spectrum license in the 12 GHz Band even if elevation angles are reduced in other frequencies. At a minimum, SpaceX cannot expect to freely alter its operations in the 12 GHz Band when doing so would prove inimical to investment and innovation by co-primary 12 GHz Band licensees who acquired their spectrum at auction. Moreover, SpaceX will retain an enormous allotment of *nearly 14 gigahertz* of spectrum even if it is not allowed to operate between 12.2 GHz and 12.7 GHz, as the FCC has repeatedly warned is a distinct possibility.

We urge the Commission to review SpaceX's modification carefully and consider whether to exclude the 12 GHz Band from the scope of SpaceX's application. Our analysis can

¹³ See *Multichannel Video Distribution and Data Service Spectrum Auction Closes: Winning Bidders Announced*, Public Notice, 19 FCC Rcd 1834 (2004) (Auction 53); *Auction of Multichannel Video Distribution and Data Service Licenses Closes*, Public Notice, 20 FCC Rcd 19807 (2005) (Auction 63).

¹⁴ Disrupting MVDDS licensees' investment-backed expectations would exceed the Commission's statutory authority and result in an unconstitutional taking forbidden under the Fifth Amendment. See, e.g., *Bell Atlantic Telephone Companies v. FCC*, 24 F.3d 1441, 1444-46 (D.C. Cir. 1994) (barring the Commission from adopting rules that would create an unlawful taking in an "identifiable class" of applications absent a "clear warrant" in the statute).

¹⁵ See, e.g., MDS Supplement.

find no plausible business or operational basis for the reduced elevation angles. More important, our analysis demonstrates that the reduced elevation angles of SpaceX’s user terminals and more satellites in view of an earth station could all but foreclose the prospect of deploying terrestrial 5G in the 12 GHz Band.

II. INITIATING A 12 GHZ BAND NPRM WILL PROMOTE INVESTMENT AND INNOVATION BY PROTECTING THE INVESTMENT-BACKED EXPECTATIONS OF LICENSEES.

Nearly four years have passed since the Coalition filed its 5G Petition. The Commission still has not opened a rulemaking proceeding to evaluate the costs and benefits of using the 12 GHz Band for terrestrial, two-way 5G. The time lost in considering additional flexibility for this band represents a missed opportunity for the United States to make an additional 500 megahertz of spectrum available for wireless broadband use.¹⁶ The Commission’s delay in considering the Coalition’s 5G Petition is especially unwarranted because federal users do not occupy the 12 GHz Band, and the band is not otherwise encumbered for government purposes.¹⁷

Allowing SpaceX to encroach on the 12 GHz Band by deliberately *making itself* more susceptible to interference from which it will demand yet more protection, while failing to act on the Coalition’s 5G Petition, would imperil one of the last viable reservoirs of contiguous 5G spectrum below the millimeter-wave bands. Experts have estimated that “US leadership in 4G accounted for nearly \$100 billion of the increase in annual GDP by 2016 as the trajectory of the wireless industry’s contribution to US GDP shifted from a projected \$350.3 billion in 2016 to a realized \$445.0 billion.”¹⁸ Recognizing this first mover’s advantage, the Chairman has embarked on an ambitious plan to free up spectrum for 5G services, primarily focusing on the Citizens Broadband Radio Service (“CBRS”) (3.55-3.7 GHz) and C-band (3.7-4.2 GHz).¹⁹ With

¹⁶ See Comments of T-Mobile USA, Inc., RM-11768, at 2-3 (filed June 8, 2016) (noting that the Commission must identify new sources of spectrum to support increasing demand and urging the Commission to initiate a rulemaking in response to the 5G Petition); Reply Comments of T-Mobile USA, Inc., GN Docket No. 17-183, at 22 (filed Nov. 15, 2017) (asking the Commission to examine the 12 GHz Band, among others, for “potential wireless mobile broadband use” and encouraging the Commission to “use this proceeding to further develop the record regarding the potential use of those bands for wireless mobile operations”).

¹⁷ See Brent Skorup, *Reclaiming Federal Spectrum: Proposals and Recommendations*, 15 Colum. Sci. & Tech. L. Rev. 90 (2013) (discussing the “painfully slow” process of reclaiming underutilized spectrum from federal incumbents).

¹⁸ See Recon Analytics LLC, *How America’s 5G Leadership Propelled the U.S. Economy* at 9 (Apr. 16, 2018), <https://bit.ly/34kpwkK> (finding that “US leadership in 4G accounted for nearly \$100 billion of the increase in annual GDP,” among other benefits).

¹⁹ See *Promoting Investment in the 3550-3700 MHz Band*, Report and Order, 33 FCC Rcd 10598 ¶ 2 (2018) (issuing rules governing CBRS that will “ensure the rapid deployment of advanced wireless technologies—including 5G—in the United States”); *Expanding Flexible Use of the 3.7 to 4.2 GHz Band, et al.*, Order and Notice of Proposed Rulemaking, 33 FCC Rcd 6915 ¶ 1 (2018) (proposing rules that will “close the digital divide by providing wireless broadband connectivity across the nation and . . . secure U.S. leadership in the next generation of wireless services”); see also *The FCC’s 5G FAST Plan*, FCC, <https://www.fcc.gov/5G> (last visited June 10, 2020).

those proceedings progressing toward completion and with the 6 GHz band (5.925-7.125 GHz) now dedicated to unlicensed use, there remain few untapped sources for licensed, sub-24 GHz spectrum other than the 12 GHz Band.²⁰

The 12 GHz Band is one of the rare candidate bands that meet the Commission’s criteria for 5G. The band consists of 500 megahertz of contiguous spectrum—more than the CBRs and C-band frequencies combined—that the Commission can readily repurpose without disrupting satellite operations or affecting operations of Federal government users of the radiofrequency spectrum in any manner.²¹ And the propagation advantages of the 12 GHz Band make it ideal for global harmonization by equipment manufacturers and international regulators.²² For these reasons, the Coalition’s 2016 proposal to enable two-way mobile 5G services in the 12 GHz Band drew widespread support from industry stakeholders.²³ At a minimum, the record demonstrates sufficient grounds to explore ways to update antiquated rules for MVDDS operations that continue to assume outdated technologies remain in common use twenty years later and continue to rely on paper-driven coordination procedures when electronic correspondence has made nearly contemporaneous feedback commonplace in other contexts.

The Coalition has in all events presented more than sufficient information to justify a timely rulemaking. It submitted several coexistence studies demonstrating the feasibility of terrestrial mobile 5G services in the 12 GHz Band in rural areas, urban canyons, and other unique geographic conditions.²⁴ No party has put forth any meaningful technical data

²⁰ See *Unlicensed Use of the 6 GHz Band, et al.*, Report and Order and Further Notice of Proposed Rulemaking, ET Docket No. 18-295 (rel. Apr. 24, 2020).

²¹ See Brent Skorup, *Sweeten the Deal: Transfer of Federal Spectrum Through Overlay Licenses*, 22 Rich. J.L. & Tech. 5 (2016) (discussing the challenges of repurposing valuable mid-band spectrum in light of federal incumbency).

²² See Comments of Coalition, GN Docket No. 14-177, et al., at 19-22 (filed Sept. 30, 2016).

²³ See 5G Petition; Letter from Senators Cory Gardner and Michael Bennet to Chairman Ajit Pai (Dec. 7, 2017) (highlighting the importance of deploying 5G service and explaining that “the Commission has an opportunity to build on their 5G efforts by considering the benefits of 5G mobile broadband use in the spectrum between 12.2- 12.7 GHz”); Reply Comments of the Computer & Communications Industry Association, GN Docket No. 17-183, at 4-5 (filed Nov. 15, 2017) (noting that the “[12 GHz] [B]and has many characteristics that would make it suitable for two-way mobile communications and help carriers meet ever-increasing demands for broadband traffic” and urging the Commission to “include the 12.2-12.7 GHz band in an NPRM based on comments from this NOP”); see also Comments of Competitive Carriers Association, RM-11768, at 9 (filed June 8, 2016); *Consumer & Governmental Affairs Bureau Reference Information Center Petition For Rulemakings Filed*, Public Notice, Report No. 3042 (rel. May 9, 2016).

²⁴ See Comments of Coalition, RM-11768, Attachment I (Tom Peters, *MVDDS 12.2-12.7 GHz Co-Primary Service Coexistence*) at 35 (filed June 8, 2016) (finding that “coexistence between MVDDS 5G operations and DBS receivers is possible with modest adjustments to MVDDS site locations and radiofrequency design parameters”); Reply Comments of Coalition, RM-11768, Attachment I (Tom Peters, *MVDDS 12.2-12.7 GHz Co-Primary Service Coexistence II*) at 35 (filed June 23, 2016) (revalidating the original coexistence study in different topological use-cases); Petition to Deny of Coalition, RM-11768, Attachment I (Tom Peters, *MVDDS 12.2-12.7 GHz NGSO Coexistence Study*) (filed Aug. 15, 2016).

challenging the extensive engineering analysis that the Coalition presented. And now that the most vocal opponent of the 5G Petition—OneWeb—has filed for bankruptcy, the Commission has a clearer path and the mandate to remove regulatory barriers that prevent terrestrial licensees from offering 5G services in the band.²⁵ Given the voluminous evidence on the record, the Commission’s failure to take basic procedural actions raises serious questions under section 7 of the Communications Act, which requires the Commission to “determine whether any new technology or service proposed in a petition or application is in the public interest within one year after such petition or application is filed.”²⁶ As Chairman Pai has observed, section 7 is a particularly important tool to identify and free new spectrum bands for next-generation services.²⁷

The Commission has also made clear that NGSO operators like SpaceX have no reliance interests in the 12 GHz Band, especially for pending applications. NGSO systems are expected to adapt to changing conditions and are allocated ample spectrum to allow for country-specific adaptations. Consistent with that principle, the Commission has long encouraged NGSO systems to enable their receivers to dynamically switch to the 11.7-12.2 GHz band for downlink service in order to avoid MVDDS interference in the 12 GHz Band.²⁸ Therefore, even if greater flexibility for MVDDS licensees were to constrain NGSO FSS operations, which the MVDDS Coalition has long contended would not, prospective NGSO FSS licensees would have access to an additional 500 megahertz of primary user downlink spectrum at 11.7-12.2 GHz. In light of the ample alternative spectrum available to SpaceX and the company’s stated plans to deploy commercial service within the next six months using the system design the Commission has already authorized,²⁹ it remains unclear why SpaceX has just decided to file this modification application now, let alone why the Commission should allow it to impair 500 megahertz in the 12 GHz Band.³⁰

²⁵ See Press Release, OneWeb, OneWeb Files for Chapter 11 Restructuring to Execute Sale Process (Mar. 27, 2020), <https://bit.ly/3bJCqRI>.

²⁶ 47 U.S.C. § 157.

²⁷ See Mike Dano, *FCC’s Pai: We Will Implement ‘Section 7’ to Evaluate Any New Technology or Service, Including Above 95 GHz*, FierceWireless (Mar. 15, 2017), <http://bit.ly/2HEHdoj>.

²⁸ See *Amendment of Parts 2 and 25 of the Commission’s Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band with Frequency Range*, Memorandum Opinion and Order and Second Report and Order, 17 FCC Rcd 9614 ¶¶ 107-09 (2002) (“We find that NGSO FSS receivers operating in the 12.2-12.7 GHz band could be designed with ‘frequency diversity’ capability that enables dynamic switching to the lower 11.7-12.2 GHz band for downlink service to avoid potential MVDDS interference in the 12.2-12.7 GHz band.”).

²⁹ See Liam Tung, *Elon Musk: SpaceX’s Public Beta of Internet from Space Service Coming by Fall 2020*, ZDNet (Apr. 24, 2020), <https://zd.net/2KA0bzU>.

³⁰ Indeed, SpaceX and other opponents of the Coalition’s 5G Petition have failed to provide any articulable need for the 12 GHz Band when so many other spectrum bands are available under the relevant NGSO authorizations. See, e.g., Letter from Patricia Cooper, Vice President of Satellite Government Affairs, SpaceX, to Marlene S. Dortch, Secretary, FCC, GN Docket No. 17-183, at 3 (filed Feb. 28, 2018) (stating without further explanation that “[t]he 12 GHz [B]and will be a crucial component for the end-user links of such NGSO networks”).

Even while NGSO operators like SpaceX have no reliance interests in the 12 GHz Band, MVDDS licensees do. Procedural due process seeks to protect people and companies from mistaken or unjustified injuries. The license SpaceX originally sought is not the license SpaceX wants to receive. MVDDS licensees rationally tolerated the original SpaceX application because they concluded the system would involve distant satellites with a complicated architecture and implausibly complicated operating plan that would not affect their deployment plans. The FCC cannot now assume grant of SpaceX's modification application is warranted without unlawfully impairing the procedural due process rights of the MVDDS licensees.

III. CONCLUSION.

SpaceX has not applied for a routine license modification. Instead, SpaceX's application presents the Commission with a fundamental question about spectrum policy: whether to impair the last pool of contiguous, non-Federal 5G spectrum for the foreseeable future in favor of an NGSO FSS system that may not prove commercially viable and already enjoys access to more than 14 gigahertz of alternative spectrum. Exacting scrutiny of SpaceX's requests from the Commission is therefore necessary and overdue—as is prompt Commission action on the 5G Petition. There is an immediate and critical need for an NPRM on the modernization of the antiquated MVDDS rules and the band's potential as a linchpin in future mobile terrestrial services. We look forward to working with the Commission as it addresses both of these urgent issues.

Respectfully submitted,

/s/ V. Noah Campbell

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