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VIA ECFS

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

Re: *Ex Parte* Communication
MVDDS 5G Coalition Petition for Rulemaking to Permit MVDDS Use of the 12.2-12.7 GHz Band for Two-Way Mobile Broadband Service, RM-11768

Dear Ms. Dortch,

AT&T Services, Inc., on behalf of the subsidiaries and affiliates of AT&T Inc. (collectively, "AT&T"), hereby submits this *ex parte* response to the submissions of the MVDDS 5G Coalition (the "Coalition"),¹ some of its individual members, and a group of eleven organizations (the "Eleven Organizations")² calling for the Commission to allow two-way mobile services in the 12.2-12.7 GHz band (or "Ku Band"). In making this request, the Coalition, its individual members, and the Eleven Organizations ignore and/or attempt to minimize the fact that such services are fundamentally incompatible with the Direct Broadcast Satellite ("DBS") services upon which tens of millions of households and businesses rely to receive video programming. As AT&T has previously noted, the operation of terrestrial, two-way mobile service (or otherwise permitting higher-power terrestrial operations) in this satellite band would create an untenable interference environment for DBS subscribers. Similarly, both the Coalition and NGSO satellite licensees agree that NGSO services and two-way terrestrial mobile services cannot coexist in this band.³ In June 2018, AT&T outlined the interference environment in the 12 GHz band and explained why the Coalition's arguments regarding the

¹ See, e.g., Petition for Rulemaking of the MVDDS 5G Coalition, RM-11768 April 26, 2016) ("Petition for Rulemaking").

² Letter from Harold Feld, Public Knowledge and Michael Calabrese, Open Technology Institute at New America to Marlene H. Dortch, FCC, RM-11768 (July 9, 2020) ("Eleven Organizations Letter").

³ Tom Peters, "MVDDS 12.2-12.7 GHz Co-Primary Service Coexistence" at 35 (June 8, 2016), attached to Petition for Rulemaking; Letter from David Goldman, Space Exploration Technologies Corp. to Marlene H. Dortch, FCC, RM-11768, at 2 (July 22, 2020) ("Instead, commenters have made bare, conclusory assertions as to the feasibility of sharing the band on a co-primary basis without providing any technical basis for such claims.").

potential for coexistence were unavailing.⁴ Nothing in the interference environment has changed.

The Commission should deny the Coalition's Petition for several reasons. First, the Coalition's plan would not adequately protect DBS services or NGSO operators. Second, the proposed plan to share the band would at best result in an inferior network deployment and consumer experience as compared to the networks currently being deployed in other bands. If the Commission wants to enable robust 5G services in this band, it likely would need to clear the band of incumbents so new flexible use licensees could deploy without geographic limitation and at standard power levels,⁵ without the risk of interference to DBS and NGSO operations. Third, the proposal to create new flexible use licenses and simply gift them to MVDDS licensees – a subset of incumbents who, after more than 15 years after obtaining licenses in the band have yet to make productive or even noticeable use of the spectrum – would be both unlawful and inefficient. If the Commission is to create new flexible use licenses in the band, it should conduct an auction to ensure that the spectrum goes to those ready to invest in rapid deployment. To bestow new flexible use rights on MVDDS licensees as the Coalition proposes would merely deprive the U.S Treasury of revenue and violate Section 309 of the Telecommunications Act.

The Petition Should Be Denied Because Two-Way, Terrestrial Mobile Service at 12.2-12.7 GHz is Fundamentally Incompatible with Existing Satellite Services.

Currently, millions of United States households and businesses rely on DBS services to receive video programming, and the Commission should continue to protect these services. Any examination of the Ku Band must take into account the intense and longstanding use of this band to provide DBS services. DBS licensees DIRECTV and DISH have provided direct-to-home satellite television services for more than 20 years, each providing service to millions of subscribers.⁶ Households and businesses all across the United States rely on DIRECTV and DISH to access high-quality service and a wide variety of content. DBS services drive competition in the market for video programming, offering consumers an alternative to cable, and compelling MVPD providers to offer lower prices and better services.

The Commission, too, has recognized the importance of protecting households and businesses that receive DBS services as it has granted additional non-exclusive authorizations in the band. For example, the Commission has declined to authorize terrestrial two-way services in the 12.2-12.7 GHz band. Although it has allowed some fixed, low power, one-way terrestrial services by MVDDS licensees, this service is subject to strict technical and deployment rules in recognition of the fundamental incompatibility between two-way mobile service and incumbent DBS operations.⁷ The Commission has stated, “we believe that [allowing] two-way services in the band without relocating the upstream path would significantly raise the potential for

⁴ Letter from Michael P. Goggin, AT&T to Marlene H. Dortch, FCC, RM-11768 (June 14, 2018).

⁵ Should the Commission propose to clear the 12 GHz band of incumbents in order to reallocate the band for 5G, it should also consider incentive mechanisms to rapidly relocate incumbents out of the band.

⁶ Both DISH and DIRECTV provide service to customers via the Ku Band.

⁷ See 47 C.F.R. § 101.1440.

instances of interference among the operations.”⁸ Indeed, the Commission found it necessary to restrict MVDDS to low-power, one-way, “stationary services that use highly directional fixed antennas” and, in addition, mandated deployment restrictions aimed to protect existing DBS operations.⁹ More than 15 years after MVDDS licenses were awarded, few if any services are being provided to the public using MVDDS.¹⁰

Neither the Coalition nor the Eleven Organizations pay more than lip service to the fact that DBS is a vital service upon which millions of U.S. households rely and that must be protected from interference.¹¹ AT&T has already responded to the Coalition’s unavailing assertions that two-way terrestrial mobile broadband services will not interfere with DBS.¹² As for the Eleven Organizations, their submission fails to even acknowledge DBS beyond disparaging comments, and does not mention DBS when acknowledging the need to protect satellite services – only NGSO operator SpaceX.¹³

The fundamental incompatibility of co-frequency terrestrial mobile and satellite services is well understood. Not only can these services typically not coexist on a co-channel basis, but also even adjacent-channel operations can be problematic. This is particularly true where devices are mobile and/or will be ubiquitously deployed and near one another. The Commission

⁸ 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 Frequency Range*, Memorandum Opinion and Order and Second Report and Order, 17 FCC Rcd 9614, ¶ 137 (2002) (“*Second Report and Order*”).

⁹ *ATC Report and Order* at ¶ 50.

¹⁰ Based on the buildout showings filed by the nine MVDDS licensees, it appears that if any service is provided to end user customers, it is minimal. For example, four of the nine licensees offer access to DISH’s WeatherNation service for a small monthly fee, but this service is not well-advertised and is not even accessible via the menus on DISH’s website – a search for “MVDDS” produces no hits and information about the service appears to only be available via a deeplink. See <https://www.dish.com/mvdds/>. Other licensees appear to only be offering very limited point-to-point service and it is not clear how many – if any – end user customers are being served. For example, the only three links supporting the buildout showing for call sign WQAR719 (which covers a market overlapping portions of Kansas and Nebraska) are contained in the same building, which houses a motor sports dealer and laser tag gym. See ULS File No. 0008754233. If one were to ignore DBS and nascent NGSO services, and focus only on MVDDS, perhaps those who have claimed the band is underutilized would be justified in saying so.

¹¹ Notably the lead Coalition member, DISH, was a vocal opponent – on technical grounds – of any rule changes in the 12 GHz band until its incentives changed. See *Opposition of EchoStar Satellite L.L.C., WT Docket No. 07-255 at 2* (filed Dec. 19, 2007) (“Five years later, MDSO seeks to upset the Commission’s balance, and operate at power levels far higher than contemplated by the Commission’s rules. This would have a significant adverse effect on 30 million DBS households nationwide, and should be rejected.”); *Ex Parte* filing of DISH Network, WT Docket No. 07-255 (filed May 16, 2008) (“further reduction in DBS service availability caused by heightened interference or any need to modify the installation, size, or maintenance of consumer satellite dishes affects the commercial viability of satellite service.”).

¹² Letter from Michael P. Goggin, AT&T to Marlene H. Dortch, FCC, RM-11768 (June 14, 2018).

¹³ Eleven Organizations Letter at 1; Eleven Organizations Letter at 3 (“Certainly, the presumption is that any expanded spectrum rights or other terrestrial use of the band must be secondary to existing incumbent satellite users. However, while we are sensitive to SpaceX’s interference concerns, we believe the best way to resolve these concerns is through a Notice of Proposed Rulemaking. . .”).

has agreed, finding that “same-band, separate operator sharing is impractical and ill-advised.”¹⁴ The Commission has cited this concern in numerous past proceedings, including when allocating the AWS-4 band¹⁵ and where it determined that permitting MSS licensees to operate ancillary terrestrial component operations was preferable to separate-operator sharing.¹⁶ And, as explained above, the Commission’s acknowledgment of these challenges built the sharing environment in the Ku Band today, including the limitations rightfully placed upon NGSO and MVDDS operations to protect incumbent DBS services from interference.

Complicating the interference environment in the Ku Band is the fact that measures designed to promote compatibility in other bands are not feasible in this environment. Most interference conflicts are resolved via geographic or spectral separation, or by simply eliminating or relocating one of the conflicting services:

- The C Band is to be cleared of incumbents, but conflict persists over adjacent channel interference coordination. Relocation of incumbents in the Ku Band would be far more complicated, as there currently exist tens of millions of DBS earth stations, not the mere thousands present in the C Band. These receivers are spread throughout the nation, on homes and businesses in every community.
- The reallocation of the L Band for terrestrial use continues to be controversial despite substantial spectral distances between the terrestrial allocation and GPS bands. In the case of the Ku Band, spectral separation would be impossible absent relocation of incumbents. Today, DBS, NGSOs and MVDDS licensees each hold non-exclusive rights to use all 500 MHz.
- In many bands, exclusion and/or coordination zones are created to ensure that terrestrial mobile and fixed satellite services do not interfere with each other. That is not practical where, as stated above, there are millions of DBS receivers, spread throughout the U.S., that require protection. Furthermore, DBS receivers are constantly being added, moved, and relocated. The potential for interference

¹⁴ *Flexibility for Delivery of Communications by Mobile Satellite Service Providers*, Report and Order and Further Notice of Proposed Rulemaking, 18 FCC Rcd 11030, ¶ 49 (2003) (“*ATC Report and Order*”). *See also id.* (“The feasibility of any given satellite-terrestrial sharing arrangement in any given frequency band depends upon inter-related factors including: propagation characteristics of the frequency band, mobility of the communication end points, geographic separation between users, anticipated operating power, protection of adjacent spectrum users from interference, extent of system deployment across territory, and other particulars.”).

¹⁵ *See, e.g., Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands*, Report and Order and Order of Proposed Modification, 27 FCC Rcd 16102, ¶ 181 (2012) (“*AWS-4 Report and Order*”) (“The Commission previously determined that separately controlled MSS and terrestrial operations (i.e., two ubiquitous mobile services) in the same band would be impractical because the parties would not be able to overcome the technical hurdles to reach a workable sharing arrangement. . . . This determination suggested that the public interest would be best served by modifying the 2 GHz MSS license to allow the satellite licensee to operate terrestrial services, rather than make the band available for terrestrial licenses under a sharing regime with MSS. As discussed below, the record demonstrates that the earlier Commission conclusion regarding the impracticality of allowing same spectrum, different operator use of the AWS-4 spectrum remains valid.”).

¹⁶ *ATC Report and Order* at ¶ 79.

will be exacerbated with NGSO services that are scheduled to be launched later this year.

- In the AWS-4 context, DISH maintained that coexistence between its recently acquired mobile satellite services and terrestrial services was not possible unless there was a unity of interest in the band. Once the FCC granted DISH its valuable terrestrial rights, DISH resolved the interference problem by simply shutting down mobile satellite service. It has yet to offer terrestrial service in the AWS-4 band. It goes without saying that this approach – to simply shut down incumbent satellite services – is not an option here. Tens of millions of Americans rely on DBS services for video content and will continue to do so for the foreseeable future.

Attempts by the MVDDS 5G Coalition to “demonstrate” compatibility of mobile broadband and DBS in this band are feeble. Indeed, to attempt to coexist with DBS services, the 5G services purportedly possible would be limited to fixed, low power deployments in “urban canyons” or other “unique geographic conditions.”¹⁷ As for NGSOs, DISH admits that the two-way terrestrial services proposed by the Coalition are incompatible, asserting that if SpaceX’s latest modification application is granted, it would “permanently foreclose” two-way terrestrial use of the band.¹⁸ Neither DISH nor the Coalition attempts to provide a sound, engineering-based explanation for why GSO satellite systems could coexist with their proposed terrestrial service but NGSO satellite systems could not.¹⁹ In short, the Coalition and its supporters admit the fundamental incompatibility of two-way, co-channel terrestrial operations in the Ku Band, but fail to explain how their proposal would overcome it.

Even If the Commission Wishes to Consider a Flexible Use Allocation in the Band to Allow Terrestrial 5G, It Should Deny the Petition.

If the Commission wishes to consider whether to make the 12 GHz band suitable for terrestrial 5G deployments, it should not waste time on the Coalition’s proposal. First, even if the Coalition were correct in claiming that its proposal would adequately protect incumbent satellite operations, the supposed benefits of its proposal are minimal. Far from making 500 MHz of mid-band available for 5G, the best the Commission could claim to have accomplished would be to have allowed some fixed, low-power base stations in “unique geographic conditions” away from the millions of DBS users sprinkled through virtually every community, perhaps in “urban canyons” or other places where satellites might not reach. This is hardly a “true” 5G service by any definition, and would not and should not be credited as such. Meanwhile the Commission would have to explain its decision to place in jeopardy both nascent NGSO services and the video services received by millions of Americans from DBS providers.

¹⁷ Letter from V. Noah Campbell, RS Access to Marlene H. Dortch, FCC, RM-11768, at 7 (June 11, 2020).

¹⁸ Letter from Jeffrey H. Blum, DISH to Marlene H. Dortch, FCC, RM-11768, at 2 (July 20, 2020).

¹⁹ Letter from Michael P. Goggin, AT&T to Marlene H. Dortch, FCC, RM-11768, Appendix A at 6-7 (June 14, 2018). Notably, DISH asserted that NGSO and 5G MVDDS systems would be incompatible even before SpaceX sought to lower the altitude of its satellite fleet.

If the Commission wants to explore whether it could make 500 MHz of spectrum available for 5G in this band, it must proceed under the assumption that this process would involve clearing the band of incumbents.²⁰ The Coalition’s proposal, by contrast, neither protects incumbents nor promotes robust 5G services, and in the critical race to 5G the Commission should not expend further resources on it.

Second, the Petition should be denied because it would be unlawful and inefficient. The Coalition seeks to have the Commission create new two-way, flexible use rights in the Band, and then simply award these new authorizations to MVDDS licensees.²¹ An auction would be the lawful and efficient means to allocate any new flexible use rights.²² This would ensure that the spectrum goes to parties who are ready, willing and able to deploy robust 5G services.²³ Moreover, there is no justification for enriching MVDDS licensees, who seem to have provided few if any useful services in the more than 15 years they have held these authorizations, at the expense of the U.S. Treasury. An auction would attract the capital needed to fund a relocation of incumbent services out of the band, a step that would be required if robust 5G services were to be made possible.

If the Commission were to consider clearing the Ku Band of incumbents to accommodate terrestrial 5G services, it should provide for the relocation of incumbents to alternative spectrum and reimburse reasonable relocation expenses. It might consider the lessons learned from recent incentive and millimeter wave auctions as well as the upcoming C Band auction, to weigh options such as vouchers and/or accelerated relocation incentives to speed the clearing of the band, or legislation to provide that relocation reimbursement and/or incentive payments would be taken from auction proceeds.

In any event, the Commission should deny the Coalition’s Petition for Rulemaking. A worthwhile two-way terrestrial 5G service is simply incompatible with the valuable satellite

²⁰ Should the Commission propose to clear the 12 GHz band of incumbents in order to reallocate the band for 5G, it should also consider mechanisms to fund the rapid relocation of incumbents out of the band. Short of legislation, the recent C Band order might provide a roadmap.

²¹ The Eleven Organizations appear to presume that any rulemaking involving this band would culminate in most or all of the 500 MHz of 12 GHz spectrum being gifted to DISH. Eleven Organizations Letter at 2 (“[I]t is imperative that the Commission ensure that DISH has access to sufficient spectrum to compete aggressively with the incumbent providers. Adding this 500 MHz of spectrum will enhance DISH’s chances of success.”). As the Eleven Organizations did not make reference to the other seven MVDDS licensees, it is unclear how they perceive these licensees’ future role in a reallocated 12 GHz band.

²² 47 U.S.C. § 309(j).

²³ The Ku Band currently is shared by DBS, NGSO and MVDDS licensees, each with non-exclusive rights to use all 500 MHz between 12.2 GHz and 12.7 GHz. Even if it were lawful to simply give Ku incumbents new 5G licenses, it is a bit brash for MVDDS licensees to insist that among the incumbents, they alone should be handed new rights in light of their “investment-backed expectations” when SpaceX has launched a fleet of satellites and DBS licensees provide valuable services to millions of households and businesses. Letter from V. Noah Campbell, RS Access to Marlene H. Dortch, FCC, RM-11768, at 8-9 (June 11, 2020). MVDDS licensees have had more than 15 years to invest in the band, with minimal service provision to show for it. AT&T agrees that investment-backed expectations must be respected; but an auction would ensure the spectrum goes to parties willing to put capital into the band rather than reward those interested primarily in extracting capital out of it.

services provided to millions of Americans today, as well as the NGSO services on the immediate horizon. Any terrestrial two-way services that might be able to coexist with incumbent satellite services would be a pale imitation of 5G at best. If the Commission nevertheless wishes to consider whether the Ku Band should be reallocated for flexible use, it should start with a clean sheet of paper.

Please contact me with any questions.

Sincerely,

/s/ Michael P. Goggin

Michael P. Goggin