

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

_____)	
Application of)	
)	
WORLDVU SATELLITES LIMITED)	IBFS File Nos. SAT-LOI-20170301-00031
)	and SAT-AMD-20180104-00004
For Amendment to Petition for)	
Declaratory Ruling Granting Access)	
to the U.S. Market for the OneWeb)	
V-Band System)	
_____)	

PETITION TO DENY OR DEFER OF SPACE EXPLORATION HOLDINGS, LLC

William M. Wiltshire
Paul Caritj

HARRIS, WILTSHIRE & GRANNIS LLP
1919 M Street, N.W.
Suite 800
Washington, D.C. 20036
202-730-1300 tel
202-730-1301 fax

Counsel to SpaceX

Tim Hughes
Senior Vice President, Global Business and
Government Affairs

Patricia Cooper
Vice President of Satellite Government
Affairs

SPACE EXPLORATION TECHNOLOGIES CORP.
1155 F Street, N.W.
Suite 475
Washington, D.C. 20004
202-649-2700 tel
202-649-2701 fax

August 6, 2018

SUMMARY

OneWeb's latest application is styled as an amendment to its pending U.S. market access application for its proposed V-band non-geostationary orbit ("NGSO") satellite system. OneWeb starts by proposing to double the number of mid-Earth orbit ("MEO") satellites in its proposed V-band NGSO constellation from 1,280 satellites to 2,560 is only the start. And the remainder of the amendment goes even further by proposing to use over 16 gigahertz of additional spectrum in the Ku-, Ka-, and E-bands on those MEO satellites. Critically, most of these added spectrum bands are subject to existing NGSO processing rounds that closed many months ago, including one in which OneWeb already received an authorization from the Commission for operation of low-Earth orbit ("LEO") satellites. This two-step expansion of OneWeb's system would significantly increase the potential for interference to other NGSO systems, extending even into frequency bands that OneWeb previously chose not to pursue. Moreover, this application violates the Commission's prohibition on ownership of multiple NGSO systems in a single band. By injecting this type of new uncertainty for all potential NGSO systems, the amendment could slow deployment of new satellite broadband systems for millions of Americans. Accordingly, the Commission should deny the proposed amendment, or at minimum defer it to new, later NGSO processing rounds.

The Commission designed its NGSO processing round rules to encourage both competition and rapid deployment by establishing clear and common operating rights for the participants in a given processing round, which also support Chairman Pai's stated goal of promoting next-generation NGSO systems and expanding broadband access where it is needed most. These rules balance opportunities for design flexibility to incorporate innovative technological advances and adapt to changing broadband market demands against the need for regulatory certainty to support

investment in and deployment of NGSO systems while avoiding a cascade of change upon change. Thus, for example, the Commission anticipated that NGSO operators might wish to revise their systems in light of the recent update to the rules for NGSO systems, but only within its existing and well-founded rules of the road under which changes that add frequencies or potential interference must be considered in new processing rounds.

SpaceX supports the Commission's balanced approach, as it enables the Commission to continue to consider NGSO applications in a fair, efficient, and timely manner so that consumers receive services faster. By contrast, considering OneWeb's proposed amendment in the ongoing processing rounds would disrupt this careful balance in two principal ways. First, the amendment would violate the Commission's prohibition against one party holding more than one application or authorized-but-unbuilt NGSO system in a given frequency band, codified in Section 25.137(d)(5). Second, OneWeb proposes to operate in large swaths of additional spectrum in a way that would significantly increase the potential for interference to other NGSO systems, two triggers within the Commission's rules that require amendments to be deemed "newly filed" and therefore deferred for consideration in a later processing round.

The Commission's multiple ownership rules protect the processing round regime by preventing parties from attempting to game the system by hoarding spectrum through speculative applications for constellations that will never be built. Nonetheless, OneWeb claims that this rule should not apply to its application, because it asserts that its expanded V-band MEO constellation is actually just part of the same NGSO system as the Ku/Ka-band LEO system the Commission previously authorized. This is the first time that OneWeb asserts this combination of constellations, even though there is no MEO component whatsoever in OneWeb's authorized-but-unbuilt Ku/Ka-band NGSO system. Moreover, OneWeb seeks authority for the new MEO

satellites to operate on 12.25 gigahertz of spectrum not previously sought for *any* component of what OneWeb now claims to be a single system. Even OneWeb’s own technical showings treat its authorized Ku/Ka-band system and the newly requested satellites as *separate* systems. Indeed, if the Commission were to treat them as a single system as OneWeb urges, that system would violate technical rules designed to protect other spectrum licensees. OneWeb should not be allowed to treat its systems differently depending on which rules it is concerned with at any given time.

In the alternative, OneWeb also argues for a waiver of the multiple-ownership prohibition, but those arguments fare no better.

- First, it argues that a waiver would not undermine the rule’s purpose of deterring spectrum speculation because, OneWeb asserts, it has demonstrated its commitment to deployment. Yet all of the items cited by OneWeb relate solely to its previously-authorized Ku/Ka-band LEO system, which does not include any MEO satellites at all.
- Second, while OneWeb correctly notes that the Commission recently eliminated the parallel prohibition on multiple ownership in the GSO satellite context, it glosses over the fact that the Commission did *not* eliminate the rule with respect to NGSO applications.
- Third, although OneWeb laments that the rule will restrict the expansion of its NGSO assets, the rule simply requires satellite operators to prioritize their business plans. The Commission has provided, and continues to provide, many alternate avenues for OneWeb to expand its system, so long as they do not unfairly disadvantage other NGSO applicants and licensees. The fact that OneWeb has failed to take advantage of these opportunities to pursue its current design plan hardly demonstrates some unjust penalty that OneWeb would suffer from straightforward application of well-known Commission rules.
- Finally, OneWeb argues it is entitled to a waiver because the Commission’s decision to revise the NGSO milestone rules “compelled” its current request for more satellites and spectrum. But the fact that a change in Commission rules creates new opportunities does not *compel* an applicant to amend its proposed system. OneWeb can still seek to *modify* its existing Ku/Ka-band authorization in a later processing round to add MEO satellites and additional frequencies not already applied for – as the Commission itself has suggested.

Accordingly, OneWeb has failed to make the extraordinary showing necessary to justify a waiver, and the Commission should dismiss OneWeb’s amendment.

Even if the Commission were to set aside the multiple-ownership prohibition, OneWeb’s application should not be considered within the ongoing processing rounds, and instead should be deferred to follow-on processing rounds. The Commission’s rules for handling such amendments are clear. Section 25.116 provides that an amendment will be deemed “major” if it changes the proposed frequencies to be used or increase the potential for interference, as OneWeb’s amendment clearly does. Section 25.116 goes on to state that an NGSO application that is amended by such a major amendment after a “cut-off” date for the relevant processing round will be considered to be a newly-filed application. Two other rules have a similar effect. Collectively, these rules help ensure that NGSO processing rounds proceed efficiently and fairly, yielding regulatory certainty for participants so that they can proceed expeditiously with actual deployment of their systems. Thus, if the Commission is to consider OneWeb’s amendment at all, it should do so only outside of the ongoing processing rounds.

In an effort to avoid this straightforward application of the Commission’s rules, OneWeb seeks a waiver so that its application may be considered along with the timely-filed applications pending in three ongoing NGSO processing rounds. Here again, its arguments fail to meet the high burden applicable to any waiver request.

- First, OneWeb claims that the Commission’s decision to modify the NGSO milestone rules “necessitated” its amendment because it “*permits* OneWeb to propose a more expansive NGSO system.” Yet nothing about the Commission’s milestone decision compels OneWeb to deploy more satellites or use more spectrum, or would penalize OneWeb for deploying its constellations as originally proposed. OneWeb’s mere interest in proposing a different system is a far cry from compulsion to do so, as Commission precedent makes clear. OneWeb has consistently claimed that it can deploy its hybrid LEO/MEO V-band system within the original six-year milestone requirement, yet it has not explained why it failed to include *any* MEO satellites in its original Ku/Ka-band system application or why it failed to file *any* application in the supplemental Ku/Ka-band processing round for spectrum it now seeks to use.
- Second, OneWeb claims that a waiver will not harm other spectrum users because the addition of over a thousand MEO satellites using many gigahertz of additional spectrum

will not increase the potential for interference. This argument directly conflicts with the Commission's conclusion in past cases that more satellites can be expected to create the potential for more interference. In addition, MEO systems present significant spectrum sharing challenges for LEO systems due to the high level of interference resulting from the disparity in the radiated power levels of their respective uplink transmissions.

Allowing OneWeb to participate in the ongoing processing rounds and double-dip into scarce spectral, orbital, and Commission resources would undermine the NGSO processing regime, encourage regulatory gamesmanship, and conflict with Commission precedent, while also injecting significant uncertainty and delay and thus inhibiting deployment of much-needed broadband infrastructure. The Commission should deny OneWeb's waiver request.

Lastly, the Commission must require OneWeb to provide complete information on its orbital debris mitigation strategy. OneWeb failed to provide this information in its initial V-band application, and the significant number of additional satellites proposed in this application enhance concerns related to space safety. Consistent with past precedent, the Commission should not consider the application unless OneWeb supplies the required information.

SpaceX supports the Commission's practice of allowing NGSO satellite operators the flexibility to change their system characteristics within a given processing round if the proposed amendment seeks no new spectrum, presents no significant expansion of potential interference, and is otherwise consistent with Commission policies. OneWeb's proposal plainly does not satisfy these criteria, and considering the amendment within the current processing rounds would disrupt the momentum the Commission has built toward authorization and actual deployment of NGSO systems. Accordingly, the Commission should dismiss the amendment for violation of the multiple-ownership prohibition, or, at a minimum, defer consideration of the amendment to new processing rounds where it can also consider the other issues raised herein.

TABLE OF CONTENTS

	<u>Page</u>
SUMMARY	i
BACKGROUND	3
DISCUSSION	7
I. THE COMMISSION SHOULD DISMISS ONEWEB’S PROPOSED AMENDMENT FOR VIOLATION OF THE PROHIBITION ON OWNERSHIP OF MULTIPLE NGSO SYSTEMS	8
A. The Multiple Ownership Prohibition in Section 25.137(d)(5) Clearly Applies	9
B. OneWeb Has Failed to Carry the Heavy Burden Required to Justify a Waiver	11
II. EVEN IF THE COMMISSION DOES NOT DISMISS THE AMENDMENT, IT SHOULD NOT ALLOW ONEWEB TO CIRCUMVENT ITS NGSO PROCESSING ROUND “CUT-OFF” RULES	16
A. OneWeb’s Amendment is Not “Necessary”	18
B. OneWeb’s Amendment Would Increase the Potential for Interference	23
C. OneWeb’s Request to Use E-Band Spectrum Should Initiate a New Processing Round.....	27
III. THE COMMISSION SHOULD REQUIRE ONEWEB TO PROVIDE COMPLETE INFORMATION ON ORBITAL DEBRIS MITIGATION AND END-OF-LIFE DISPOSAL PLANS BEFORE ACTING ON THE PROPOSED AMENDMENT	28
CONCLUSION	31

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

_____)	
Application of)	
)	
WORLDVU SATELLITES LIMITED)	IBFS File Nos. SAT-LOI-20170301-00031
)	and SAT-AMD-20180104-00004
For Amendment to Petition for)	
Declaratory Ruling Granting Access)	
to the U.S. Market for the OneWeb)	
V-Band System)	
_____)	

PETITION TO DENY OR DEFER OF SPACE EXPLORATION HOLDINGS, LLC

Space Exploration Holdings, LLC (“SpaceX”) hereby petitions to deny or defer the above referenced application filed by WorldVu Satellites Limited (“OneWeb”).¹ Although OneWeb has styled this application as an amendment to its pending application for access to the U.S. market for its proposed V-band non-geostationary orbit (“NGSO”) satellite system, that is only part of the story. With this amendment, OneWeb seeks to double the number of mid-Earth orbit (“MEO”) satellites in its proposed V-band constellation from 1,280 to 2,560. It further seeks authority for all 2,560 of those MEO satellites to use over 16 gigahertz of additional spectrum in the Ku-, Ka-, and E-bands, including spectrum covered by an NGSO authorization previously issued to OneWeb. Such an amendment would violate the Commission’s prohibition against one party holding more than one application or authorized-but-unbuilt NGSO system in a given frequency band. Even if the Commission were to waive that prohibition, the Commission’s rules specify that

¹ See Amendment, IBFS File No. SAT-AMD-20180104-00004 (Jan. 4, 2018) (“OneWeb Amendment”).

the underlying application would then be deemed newly filed and therefore deferred for consideration in a new NGSO processing round.

SpaceX recognizes the need to provide for some flexibility within NGSO processing rounds to allow NGSO operators the ability to make adjustments to incorporate technical advancements and reflect experience gained from actual constellation manufacture and operations, as well as to adapt to evolving broadband customer service demands. Given the history of NGSO systems proposed in years past, such design evolution would not be uncommon. In fact, accommodating such requests would reinforce the public interest when the Commission can do so without disadvantaging other applicants and licensees, and without otherwise undermining the processing-round regime. The Commission invited just such modification applications when it recently updated its rules for NGSO systems.² However, the Commission has also made clear that applications resulting in additional interference or using additional frequencies would kick off new processing rounds. These rules of the road are the foundation of the processing-round system. They help bring broadband to consumers faster by allowing the Commission to consider a batch of comparable NGSO applications under the same rules and policies, in a fair, efficient, and timely manner, speeding regulatory review and eventual constellation deployment.

OneWeb claims that its amendment will not harm other spectrum users because the addition of thousands of MEO satellites using many gigahertz of additional spectrum will not increase the potential for interference. But the Commission has already concluded that more satellites can be expected to create the potential for more interference without additional efforts to mitigate this harm. Moreover, MEO systems inherently present significant spectrum sharing

² See *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed Satellite Service Systems and Related Matters*, 32 FCC Rcd. 7809, ¶ 67 n.150 (2017) (“*NGSO Update Order*”).

challenges for LEO systems due to disparate power levels that result in a high level of interference, and OneWeb has proposed nothing to improve the situation. Allowing OneWeb to participate in the ongoing processing rounds and double-dip into scarce spectral, orbital, and Commission resources would undermine the NGSO processing regime, encourage regulatory gamesmanship, and conflict with Commission precedent, while also injecting significant uncertainty and delay and thus inhibiting deployment of much-needed broadband infrastructure.

OneWeb does not want to play by the rules, however. Instead, it seeks to have its amendment considered in several ongoing processing rounds by waiving the very rules designed to protect the orderly administration of the processing round system. As discussed below, its arguments for such a waiver are deeply flawed and do not begin to satisfy the high burden faced by any waiver applicant. In this case, a departure from the general rule would undermine the integrity of the Commission's NGSO processing round regime and would ultimately slow down the efforts to bring new services and competition to consumers by disadvantaging other NGSO operators who long ago filed timely applications. Accordingly, if the Commission does not dismiss the amendment for violation of the multiple-ownership prohibition, at a minimum it should remove OneWeb's application from the current processing round and defer consideration to a new set of processing rounds where the impact on other NGSO systems can be fully assessed.³

BACKGROUND

OneWeb has filed two applications seeking authority to launch and operate NGSO satellite constellations. First, OneWeb sought U.S. market access for its proposed NGSO system of 720

³ In accepting OneWeb's application for filing, the Commission specifically stated that it was "not mak[ing] any determination about the need to initiate any new processing round at this time." Public Notice, "Satellite Space Applications Accepted for Filing," Rep. No. SAT-01327 (July 6, 2018).

low-Earth orbit (“LEO”) satellites operating in Ku- and Ka-band spectrum.⁴ The Commission accepted that application in July 2016, initiating a Ku/Ka-band NGSO processing round.⁵ A total of twelve applications were filed in this processing round prior to the established cut-off date of November 15, 2016. In June 2017, the Commission granted OneWeb’s request for U.S. market access with respect to a total of 5.9 gigahertz of spectrum.⁶ Though authorized, OneWeb’s Ku/Ka-band NGSO system has not yet been built. The Commission has since granted five more applications from that processing round, including a license granted to SpaceX.⁷

Second, in response to the Commission’s initiation of an NGSO processing round for V-band spectrum,⁸ OneWeb sought U.S. market access for an NGSO system composed of 720 LEO satellites and 1,280 MEO satellites, operating with 10 gigahertz of spectrum.⁹ A total of nine applications were filed in this processing round prior to the established cut-off date of March 1, 2017. OneWeb’s application has been accepted for filing,¹⁰ but remains pending. To date, the Commission has granted two applications from that processing round.¹¹

⁴ See Petition for Declaratory Ruling, IBFS File No. SAT-LOI-20160428-00041 (Apr. 28, 2016) (“OneWeb Ku/Ka-Band Application”).

⁵ See Public Notice, “OneWeb Petition Accepted for Filing; Cut-Off Established for Additional NGSO-Like Satellite Applications or Petitions for Operations in the 10.7-12.7 GHz, 14.0-14.5 GHz, 17.8-18.6 GHz, 18.8-19.3 GHz, 27.5-28.35 GHz, 28.35-29.1 GHz, and 29.5-30.0 GHz bands,” 31 FCC Rcd. 7666 (IB 2016).

⁶ See *WorldVu Satellites Limited*, 32 FCC Rcd. 5366 (2017) (“*OneWeb Authorization*”).

⁷ See *Space Exploration Holdings, LLC*, FCC 18-38 (rel. Mar. 29, 2018) (“*SpaceX Authorization Order*”); *Telesat Canada*, 32 FCC Rcd. 9663 (2017); *Space Norway AS*, 32 FCC Rcd. 9649 (2017); *O3b Limited*, FCC 18-70 (rel. June 6, 2018) (“*O3b Authorization Order*”); *Audacy Corp.*, FCC 18-72 (rel. June 6, 2018) (“*Audacy Authorization Order*”).

⁸ See Public Notice, “Boeing Application Accepted for Filing in Part, Cut-Off Established for Additional NGSO-Like Satellite Applications for Operations in the 37.5-40.0 GHz, 40.0-42.0 GHz, 47.2-50.2 GHz and 50.4-51.4 GHz Bands,” 31 FCC Rcd. 11957 (IB 2016).

⁹ See IBFS File No. SAT-LOI-20170301-00031 (Mar. 1, 2017) (“OneWeb V-band Application”).

¹⁰ See Public Notice, “Satellite Space Applications Accepted for Filing,” Rep. No. SAT-01245 (IB, rel. June 16, 2017).

¹¹ See *O3b Authorization Order* and *Audacy Authorization Order*, *supra*.

OneWeb did not, however, take the opportunity to submit an application in a later NGSO processing round covering over two gigahertz of additional Ku- and Ka-band spectrum.¹² Two additional applications were filed in this processing round prior to the established cut-off date of July 26, 2017, including one by SpaceX that has been granted.¹³

In January 2018 – from five months to more than a year after the cut-off dates for the relevant NGSO processing rounds – OneWeb filed its amendment. This application ostensibly would amend OneWeb’s V-band NGSO system application. Yet in addition to seeking V-band spectrum for an additional 1,280 MEO satellites, the amendment requests authority for operation of all 2,560 MEO satellites using 18.65 gigahertz of wholly unrelated spectrum in the Ku-, Ka-, and E-bands – most of which OneWeb has never requested in any processing round. The spectrum at issue is summarized in Table 1 below. Notably, much of this spectrum is the subject of the two ongoing Ku/Ka-band NGSO processing rounds, which have been closed to new applicants for months – one from which OneWeb already received an authorization for an as-yet unbuilt system and one in which it chose not to file an application.¹⁴ OneWeb seeks waivers of several Commission rules designed to prevent a move precisely like the one it is now proposing. It bases its request on the assertion that the Commission’s recent update to its deployment milestone rules constitutes “special circumstances” that warrant a deviation from those rules, and that a waiver would not undermine their policy objectives.¹⁵

¹² See Public Notice, “Applications Accepted for Filing; Cut-Off Established for Additional NGSO-like Satellite Applications or Petitions for Operations in the 12.75-13.25 GHz, 13.85-14.0 GHz, 18.6-18.8 GHz, 19.3-20.2 GHz, and 29.1-29.5 GHz Bands,” 32 FCC Rcd. 4180 (IB 2017).

¹³ See *SpaceX Authorization Order*, *supra*.

¹⁴ Moreover, even within the V-band spectrum OneWeb initially requested, its Amendment seeks expanded access to 4 GHz of additional spectrum for user terminals. See OneWeb Amendment at 8 n.27.

¹⁵ See, e.g., *id.* at 18.

Frequency Range	New Spectrum Not Previously Requested by OneWeb in <i>This</i> Processing Round (MHz)	New Spectrum Not Previously Requested by OneWeb In <i>Any</i> Processing Round (MHz)
10.7-12.7 GHz	2,000	
12.75-13.25 GHz	500	500
13.75-14.5 GHz	750	250
14.0-14.5 GHz	500	
15.43-15.63 GHz	200	200
17.8-18.1 GHz	300	
18.1-18.6 GHz	500	
18.8-19.3 GHz	500	
19.3-19.7 GHz	400	400
19.7-20.2 GHz	500	500
27.5-30.0 GHz	2,500	400
37.5-43.5 GHz		
47.2-50.2 GHz		
50.4-51.4 GHz		
71.0-76.0 GHz	5,000	5,000
81.0-86.0 GHz	5,000	5,000
Total	18,650	12,250

Table 1. Spectrum Requested in OneWeb Amendment

This application cannot be considered in a vacuum given other related filings currently before the Commission. Specifically, OneWeb also sought modification of its existing Ku/Ka-band NGSO authorization to nearly triple the number of LEO satellites – increasing from 720 to 1,980.¹⁶ All of OneWeb’s applications seeking to add thousands of additional satellites hinge on waivers from Commission rules that are designed to increase deployment and competition for customers by maintaining some regulatory certainty for NGSO applicants.

¹⁶ See Application for Modification, IBFS File No. SAT-MOD-20180319-00022 (Mar. 19, 2018).

DISCUSSION

OneWeb's desire to add more satellites and more frequencies to its constellation is not, in and of itself, objectionable. Indeed, "[i]n recognition of the several years required to construct a satellite, or constellation of satellites, the rapidly changing technology, and [the] goal of encouraging more efficient use of the radio spectrum, the Commission has tried to allow licensees to modify their satellite systems when possible."¹⁷ However, the amendment as proposed by OneWeb would distort the Commission's policy objectives by violating several Commission rules. OneWeb seeks waivers of those rules to avoid dismissal of its amendment or deferral of its underlying application to a later processing round.

The Commission's standard for evaluating such waiver requests is well established. "An applicant for waiver faces a high hurdle even at the starting gate."¹⁸ The party petitioning the Commission for a waiver bears the burden of showing good cause for the requested departure from the rule,¹⁹ and waiver will only be granted where particular facts would make strict compliance inconsistent with the public interest.²⁰ To satisfy this public interest requirement, the waiver cannot undermine the purposes of the rule, and there must be a stronger public interest benefit in granting the waiver than in applying the rule. In the specific context of processing rounds, "[t]he Commission will waive deadlines only in extreme cases involving extraordinary circumstances."²¹ If a waiver is to be granted, "[t]he agency must explain why deviation better serves the public

¹⁷ *Teledesic LLC*, 14 FCC Rcd. 2261, ¶ 5 (IB 1999) ("*Teledesic*").

¹⁸ *WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969), *cert. denied*, 409 U.S. 1027 (1972).

¹⁹ *See* 47 C.F.R. § 1.3.

²⁰ *Northeast Cellular Tel. Co., L.P. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990) ("*Northeast Cellular*") (citing *WAIT Radio*, 418 F.2d at 1159).

²¹ *EchoStar Satellite Corp.*, 16 FCC Rcd. 14300, ¶ 5 (IB 2001), *recon. denied*, 17 FCC Rcd. 8305 (IB 2002) ("*EchoStar*").

interest and articulate the nature of the special circumstances to prevent discriminatory application and to put future parties on notice as to its operation.”²² As demonstrated below, OneWeb has failed to meet the heavy burden required to justify any of the waivers it has requested.

I. THE COMMISSION SHOULD DISMISS ONEWEB’S PROPOSED AMENDMENT FOR VIOLATION OF THE PROHIBITION ON OWNERSHIP OF MULTIPLE NGSO SYSTEMS

To facilitate deployment of new broadband networks to people who are not yet served and to quickly bring new competition to the broadband market, the Commission has adopted a number of policies that prevent hoarding spectrum and valuable orbital resources. Section 25.137(d)(5) of the Commission’s rules in particular prohibits a party from applying for U.S. market access for an NGSO satellite system if that party has already been granted U.S. market access for an as-yet unbuilt NGSO system involving the same frequency band.²³ In this way, the Commission encourages licensees to prioritize more promising business plans, while providing opportunities to other providers and new entrants.²⁴

OneWeb’s proposed amendment would subvert this policy. OneWeb already holds an authorization from the Commission to access the U.S. market from an NGSO system operating in the Ku- and Ka-bands. Its proposed amendment would add the same Ku- and Ka-band spectrum (along with many gigahertz of additional frequencies) to the pending OneWeb V-band Application as well. Grant of this amendment would result in one pending OneWeb NGSO system application and one authorized-but-unbuilt OneWeb NGSO system in the same frequency bands, contrary to Commission policy embodied in the prohibition on multiple ownership in Section 25.137(d)(5).

²² *Northeast Cellular*, 897 F.2d at 1167 (citing *Industrial Broadcasting Co. v. FCC*, 437 F.2d 680 (D.C. Cir. 2970)).

²³ *See* 47 C.F.R. § 25.137(d)(5).

²⁴ *Amendment of the Commission’s Space Station Licensing Rules and Policies*, 18 FCC Rcd. 10760, ¶ 230 (2003) (“2003 Licensing Reform Order”).

As demonstrated below, the rule is clearly applicable and OneWeb has not made a sufficient showing to justify a waiver.

A. The Multiple Ownership Prohibition in Section 25.137(d)(5) Clearly Applies

Despite the obvious applicability of the multiple-ownership prohibition on its face, OneWeb raises several arguments in an attempt to get around it. First, OneWeb surprisingly asserts that the rule “is not implicated by this Amendment at all.”²⁵ It arrives at this conclusion by arguing that the MEO Constellation proposed as part of the pending V-band application is actually part of the same NGSO system as the Ku/Ka-band LEO Constellation that has already been granted U.S. market access. This is the first time that OneWeb asserts this combination of constellations, ignoring that it did not include any MEO component whatsoever in its authorized-but-unbuilt Ku/Ka-band NGSO system. The facts do not match this new claim. Indeed, that authorized system has a different call sign (S2963) than does the one affected by the proposed amendment (S2994), and their respective market access applications were filed separately, over eleven months apart.²⁶ If the amendment were granted, the OneWeb MEO system would have a different performance bond and different milestone compliance date than does OneWeb’s authorized-but-unbuilt LEO system. The MEO component would also operate on 12.25 gigahertz of spectrum not licensed to *either* of the LEO components OneWeb has proposed.²⁷ If OneWeb’s true goal is to add MEO satellites to its authorized Ku/Ka-band system, the correct approach would be to modify that

²⁵ OneWeb Amendment at 28.

²⁶ The ITU filings under which OneWeb claims it will operate its various systems were also filed at different times and by different administrations. Moreover, to the extent the Commission did consider the instant amendment to be a modification of the OneWeb system already granted market access, it would have to deem this application “grossly untimely.” See *EchoStar*, ¶¶ 3-5 (rejecting modification filed well after grant of authorization through a processing round as “grossly untimely”).

²⁷ These new bands are 12.75-13.25 GHz, 13.75-14.0 GHz, 15.43-15.63 GHz, 29.1-29.5 GHz, 19.3-19.7 GHz, 19.7-20.2 GHz, 71.0-76.0 GHz, and 81.0-86.0 GHz.

system to add those satellites and, assuming that expansion caused added interference, address that application within a separate processing round. It cannot add frequencies to its V-band system while claiming that the distinction between these systems is illusory in an attempt to circumvent the multiple ownership restriction.

Even OneWeb’s own filings belie its assertion that the Commission should treat the various LEO and MEO systems it has proposed as a single constellation in this proceeding. For example, in its attempt to demonstrate compliance with applicable limits on power flux-density (“PFD”) levels in the Ka-band, OneWeb omits the 720 Ka-band satellites already authorized from its calculation of PFD for the operation of the 2,560 MEO satellites proposed in this amendment.²⁸ If it had included those 720 satellites in the calculation, OneWeb’s combined system would *exceed* the PFD limits by 9.4 dB for user beams and 9.6 dB for gateway beams.²⁹ Similarly, in arguing that it will comply with applicable equivalent power flux-density (“EPFD”) limits in the Ku- and Ka-bands, OneWeb asserts that “[t]he aggregate effect of transmissions from and to multiple OW-MEO satellites will be correctly taken into account in the EPFD analysis.”³⁰ Yet that analysis is apparently based upon the increase in the number of OneWeb MEO satellites from 1,280 to 2,560 – again, failing to consider the 720 Ku/Ka-band satellites already authorized.³¹ OneWeb cannot expect the Commission to consider the various systems it has proposed as a single constellation when OneWeb itself considers them separately in its own analysis to demonstrate compliance with the Commission’s technical rules.

²⁸ See, e.g., OneWeb Amendment, Attachment A at 20-21.

²⁹ If the calculation were to include the full 1,980 Ka-band satellites proposed in OneWeb’s pending modification application, the exceedance would increase to 27.6 dB for user beams and 27.8 dB for gateway beams.

³⁰ OneWeb Amendment, Attachment A at 30.

³¹ *Id.*

OneWeb also makes the related argument that the rule against ownership of multiple NGSO systems only applies to applications “for new GSO-like and NGSO-like satellite systems.”³² For the reasons discussed above, OneWeb’s V-band application and its proposed amendment seek authority for just such a new NGSO system – separate and distinct from the one previously authorized. Moreover, the order cited by OneWeb makes clear that the prohibition applies in all but a very limited number of situations, stating that “[t]hese limits do not apply to applications for replacement satellites, renewals of NGSO-like constellation licenses, modifications, [and] transfers of control.”³³ The proposed amendment, by contrast, relates to an application for authority to access the U.S. market from an NGSO system with satellites operating at a very different altitude (LEO vs. MEO) using much more spectrum than does OneWeb’s authorized-but-unbuilt NGSO system. In these circumstances, the prohibition in Section 25.137(d)(5) on ownership of multiple pending or authorized-but-unbuilt NGSO systems in a spectrum band clearly applies.

B. OneWeb Has Failed to Carry the Heavy Burden Required to Justify a Waiver

As an alternative, OneWeb requests a waiver of the multiple-ownership prohibition – a rule that has never been waived in the 15 years since adoption. Yet its arguments for waiver fare no better.

First, OneWeb argues that allowing it to file another application for Ku- and Ka-band spectrum would not undermine the purpose of the rule, which is to discourage speculation.³⁴ In support of this contention, OneWeb asserts that it has already demonstrated its commitment to deploying both the LEO and MEO satellites it has proposed by beginning construction of a satellite

³² See OneWeb Amendment at 28-29 (quoting *2003 Licensing Reform Order*, ¶ 233).

³³ *2003 Licensing Reform Order*, ¶ 233.

³⁴ See OneWeb Amendment at 30.

manufacturing facility in Florida, arranging for the launch of its first ten LEO satellites in May 2018, and filing a surety bond for its authorized LEO system.³⁵ Yet all of the items cited by OneWeb relate solely to its previously-authorized system, which does not include any MEO satellites at all. These LEO satellites are much less complex than the proposed MEO satellites, as they will have static antennas emitting large beams in relatively limited spectrum rather than phased array antennas with narrow, steerable beams operating over a much wider array of frequencies. While OneWeb's activities arguably may indicate an intention to deploy its authorized LEO system, nothing it has done to date relates to its MEO system, much less its proposed expansion thereof.

OneWeb's assertion of intent to build becomes more strained when considered in the context of all of its NGSO applications. In addition to the 1,280 new MEO satellites and the more than 16 gigahertz of additional spectrum OneWeb seeks in the current amendment, it has also proposed to expand its Ku/Ka-band NGSO system by 1,260 additional LEO satellites. While the raw number of satellites at issue does not itself indicate speculative intent, the reach for additional spectrum filings and the kaleidoscope of NGSO system architectures certainly should raise questions as to the likelihood that all systems that OneWeb has applied for will actually be deployed.

Second, OneWeb contends that its request for a waiver draws indirect support from the Commission's recent elimination of the parallel prohibition on multiple ownership in the GSO satellite context.³⁶ However, the Commission did *not* eliminate the NGSO multiple ownership

³⁵ *Id.*

³⁶ *See id.* at 30-31.

rule applicable here at the same time it did so for GSO applications.³⁷ Retaining the rule limiting one party to no more than one NGSO application makes sense because it could be composed of many hundreds of satellites – as OneWeb itself demonstrates. In addition, because each NGSO system gets to use a portion of each frequency band during in-line events (in the absence of coordination), this limit ensures that no party can claim multiple shares of spectrum during such events. Waiving the prohibition on multiple ownership of NGSO systems could thwart NGSO competition by allowing OneWeb access to twice the amount of spectrum as other Ku/Ka-band NGSO licensees. In this way, control of two systems in a band would reduce the incentives to invest in technologies that use spectrum efficiently and increase the incentives for obstructionism and gamesmanship in operator-to-operator coordination.³⁸

Third, OneWeb asserts that “the restriction on further Ku- and Ka-band applications before OneWeb’s LEO Constellation is fully built restricts its ability to expand its network to increase overall broadband coverage.”³⁹ This argument echoes one the Commission explicitly rejected when it adopted the rule, when some argued that it was too restrictive and could foreclose business

³⁷ See, e.g., *Dean v. U.S.*, 556 U.S. 568, 573 (2009) (“[W]here Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion.”). Indeed, as the Commission found when it first adopted the prohibition against multiple attributable NGSO interests, such a rule is but one important component of the layered protections against speculation. See *2003 Licensing Reform Order*, ¶ 230 (the prohibition “does not totally prevent speculation, [but] it does provide, *together with* strict milestone enforcement and the new bond requirement we adopt above, some protection against speculation” (emphasis added)).

³⁸ Such coordination is the Commission’s preferred approach for NGSO spectrum sharing. See, e.g., *NGSO Update Order*, ¶ 48 (“Before resorting to a default mechanism, we will require authorized NGSO FSS operators to discuss their technical operations in good faith with an aim to accommodating both systems.”).

³⁹ OneWeb Amendment at 31. OneWeb also argues that waiving the rule would enable it to provide low-latency, high-speed broadband and thereby serve the public interest in closing the digital divide. *Id.* at 29. While this is certainly an important national goal, it is precisely the same one that OneWeb claimed that its original Ku/Ka-band and V-band systems would achieve. See, e.g., OneWeb V-band Application at 31 (“OneWeb respectfully requests the Commission to expeditiously grant this Petition to facilitate OneWeb’s deployment of the next generation of broadband connectivity and thereby close the ‘digital divide’ in the U.S. in a timely manner.”); OneWeb Ku/Ka-band Application at 25 (“The OneWeb System’s unique architecture will connect the world’s unconnected”).

plans. The Commission found that the rule would restrain speculation without precluding legitimate applications from consideration, stating that the rule “simply requires satellite operators to prioritize their business plans.”⁴⁰ The rule achieved the Commission’s desired result when OneWeb prioritized its original applications and decided against pursuing other opportunities presented by the Commission’s processing rounds.

To ensure that customers ultimately receive the best possible service, the Commission’s rules are designed to permit NGSO operators to pursue different architectures and operational approaches if their business plans have changed, but they should remain in the given processing round only if their proposals are consistent with the integrity of the multiple ownership rules, the processing round regime and associated spectrum rules, and the rights of other applicants in the round. OneWeb could still seek to *modify* its existing Ku/Ka-band authorization in a later processing round to add MEO satellites and additional frequencies. Indeed, the Commission invited just such modification applications when it adopted the new milestone regime – a fact cited by OneWeb as “precisely the catalyst behind the instant Amendment.”⁴¹ However, the Commission also clearly stated that such applications would kick off new processing rounds.⁴² In light of this opportunity for modification, the Commission declined to implement other forms of relief – such as the back-door modification OneWeb seeks here through waiver of the multiple ownership rule – because they would “creat[e] undue uncertainty for other operators.”⁴³ Accordingly, OneWeb is free to seek additional orbital and spectrum resources through modification of the system covered by its existing market access authorization – which would not

⁴⁰ 2003 Licensing Reform Order, ¶ 230.

⁴¹ OneWeb Amendment at 32.

⁴² See NGSO Update Order, ¶ 67 n.150 (“a licensee may request to modify its authorization at any time to deploy additional satellites,” and such applications will be treated as “applications filed after a processing round”).

⁴³ *Id.*

involve a second NGSO system in the same spectrum bands. It should not be permitted to do so by injecting itself into ongoing NGSO processing rounds many months after the applicable cut-off dates to get a second bite at the apple.

Finally, OneWeb argues that the Commission’s decision to relax the NGSO milestone rules “compelled” a re-evaluation of its NGSO system proposals, such that “it would be fundamentally unjust to penalize OneWeb for adjusting the parameters of its MEO constellation” in response.⁴⁴ Notably absent is any precedent in which the Commission has found such a rule change sufficient to justify waiver of Section 25.137(d)(5) – especially when the alternative of modifying OneWeb’s existing authorization would render the prohibition in that rule entirely inapplicable. Rather, as discussed in greater detail below, the fact that a change in Commission rules creates new opportunities does not *compel* an applicant to amend its proposed system. When the Commission has adopted rules that “compel” conforming changes, it has explicitly given those with pending applications an opportunity to amend them – and the failure to do so results in dismissal. That is the type of case in which amendment is “compelled,” and those circumstances clearly do not apply here. Nor has OneWeb suffered an unjust penalty, when any restrictions it faces now result from its own failure to timely propose a more capable system, potentially requiring waiver of other Commission rules, even as other applicants appropriately sought such waivers within the applicable processing rounds.

Accordingly, OneWeb has failed to demonstrate the extraordinary circumstances necessary to meet the high hurdle required to justify a waiver of the multiple-ownership prohibition, and the Commission should deny its request.

⁴⁴ OneWeb Amendment at 18.

II. EVEN IF THE COMMISSION DOES NOT DISMISS THE AMENDMENT, IT SHOULD NOT ALLOW ONEWEB TO CIRCUMVENT ITS NGSO PROCESSING ROUND “CUT-OFF” RULES

Setting aside the multiple ownership issue, OneWeb recognizes that three separate Commission rules designed to ensure the integrity of the NGSO processing round regime provide that the type of amendment proposed here will cause the underlying application to be deferred to a follow-on processing round. The Commission’s NGSO processing round regime was intended to “ensure orderliness, expedition and finality in the licensing process” while also achieving “fairness among applicants and permit[ting] the rapid dispatch of Commission business.”⁴⁵ In adopting these rules, the Commission stated its twin goals of establishing “satellite licensees’ operating rights clearly and quickly” and ensuring “that there is the most efficient use of satellite spectrum and orbit resources.”⁴⁶ Indeed, in the very NGSO authorization issued to OneWeb, Chairman Pai emphasized the important role that processing rounds play in promoting competition in a manner that protects the interests of all spectrum users.

We hope to approve many more constellations because we know that the more companies compete, the more consumers win. . . . But first things first. This *Order* lays the foundation for deployment of future low-Earth orbit satellites while establishing carefully measured standards to ensure that these NGSO constellations will not interfere with their terrestrial or geostationary counterparts. And the *Order* provides that OneWeb will need to accommodate in-line interference avoidance and spectrum sharing with other NGSOs in the future.⁴⁷

These objectives are embodied in the rules OneWeb now seeks to avoid. First, Section 25.116(c) provides that if a major amendment to an application pending in an NGSO processing round is submitted after a cut-off date, the application will be considered to be newly filed, and

⁴⁵ *EchoStar*, ¶ 5.

⁴⁶ *2003 Licensing Reform Order*, ¶ 7.

⁴⁷ *OneWeb Authorization Order*, Statement of Chairman Ajit Pai at 1.

will lose its status in the processing group.⁴⁸ Second, Section 25.157(c) provides that an NGSO system application not filed in response to a public notice initiating a processing round will initiate a new processing round.⁴⁹ Third, and relatedly, Section 25.155(b) provides that an application for an NGSO-like satellite authorization will be entitled to comparative consideration with other mutually exclusive applications only if the application is received by the cut-off date specified in a public notice.⁵⁰ OneWeb seeks waivers of all three of these rules, such that its application would be considered along with timely-filed applications in three ongoing processing rounds.⁵¹ Granting these waivers would frustrate the Commission's intent to encourage deployment of NGSO systems.

Even OneWeb has not always agreed with the approach it now proposes for the NGSO processing round regime. In particular, in its comments filed in the same proceeding that resulted in updated NGSO deployment rules, OneWeb argued that NGSO applicants that file after a cut-off date should not be allowed "to avail themselves of the [spectrum sharing] mechanism on an equal footing with prior processing round licensees and market access grantees. Those later filed systems must commit to avoiding interference to prior processing round participants at such time as those participants have real systems."⁵² Yet now that OneWeb itself has submitted an application well after relevant cut-off dates, it asserts that a different result is appropriate such that its application should be awarded the same status as those filed within the applicable deadlines.

⁴⁸ See 47 C.F.R. § 25.116(c). Major amendments include those that increase the potential for interference or change the proposed frequencies or orbital locations to be used. *Id.* § 25.116(b)(1).

⁴⁹ See *id.* § 25.157(c).

⁵⁰ See *id.* § 25.155(b).

⁵¹ See OneWeb Amendment at 19-27 and n.83.

⁵² Comments of OneWeb, IB Docket No. 16-408, at 13 (Feb. 27, 2017).

Here again, OneWeb argues that the change in the milestone rules provides the “special circumstances” that justify a waiver of the rules, to allow its application to be considered with timely-filed applications in the ongoing processing rounds. Specifically, it claims that, because the rule change “necessitated” its amendment and the changes it proposes will purportedly reduce the potential for interference to other NGSO systems, waiver is appropriate.⁵³ As discussed below, neither argument withstands scrutiny.

A. OneWeb’s Amendment is Not “Necessary”

OneWeb claims that the Commission’s decision to modify the NGSO milestone rules “necessitated” its amendment because it “*permits* OneWeb to propose a more expansive NGSO system.”⁵⁴ Yet the mere ability to propose a different system is a far cry from compulsion to do so, as Commission precedent makes clear. OneWeb asserts that when the Commission revises its service rules in a way that affects how licensees can use spectrum, “it generally affords applicants an opportunity to amend their applications ‘to bring them into conformity with the requirements and policies adopted.’”⁵⁵ While this statement is true, it is also totally irrelevant to the case at hand. When the Commission has adopted rules that make conforming changes “necessary,” it has explicitly given those with pending applications an opportunity to amend them to address any new requirements. Indeed, in such cases, the failure to amend the underlying application to conform

⁵³ See OneWeb Amendment at 18-19.

⁵⁴ *Id.* at 22 (emphasis added).

⁵⁵ *Id.* at 27 n.90.

to the new requirements would result in dismissal.⁵⁶ That is the type of case in which amendment is “necessary.”

For example, when the Commission adopted new rules for Big LEO systems, it reassured those with pending applications that they could file conforming amendments without running afoul of Section 25.116(c) – while other amendments would be treated as newly-filed applications.

We have repeatedly emphasized that [Big LEO] applicants who filed by the cut-off date will be afforded an opportunity to amend their applications, if necessary, to bring them into conformance with any requirements and policies that are adopted for satellite systems in these bands. Thus, a change from a GSO system configuration to a LEO system configuration to meet our satellite system design requirement or a change in coverage patterns to conform with our satellite visibility requirements would be permitted without affecting a particular application's status in this processing group. However, a change that is not necessary to bring the application into conformance with our rules and which would increase frequency conflicts, such as a change from a CDMA to a TDMA/FDMA architecture, would render the application a newly filed application to be considered in a future processing group.⁵⁷

Thus, Commission precedent indicates that applicants may be permitted to amend pending applications if newly enacted regulatory restrictions would otherwise require their dismissal – not to allow licensees to turn back the clock to take advantage of new regulatory flexibility.

⁵⁶ See, e.g., *Establishment of Policies and Service Rules for the Broadcasting-Satellite Service at the 17.3-17.7 GHz Frequency Band*, 22 FCC Rcd. 8842, ¶ 145 (2007) (“Applicants can amend their choice of orbital locations consistent with our spacing rules adopted today to reduce the likelihood of mutual exclusivity. In addition, applicants are limited to five pending 17/24 GHz BSS applications. Any application that is not amended by the date specified by the Bureau will be dismissed as defective.”); *Establishment of Policies and Service Rules for the Broadcasting-Satellite Service at the 17.3-17.7 GHz Frequency Band*, 22 FCC Rcd. 17951, ¶ 35 (2007) (“To implement this decision, we direct the Bureau to release a Public Notice shortly after these rules become effective, inviting current applicants to amend the applications pending as of the date of this Order consistent with the rules we adopt today. We further direct the Bureau to dismiss, as defective, any application that is not amended by the date specified in the Public Notice.”); *Establishment of Policies and Service Rules for the Mobile Satellite Service in the 2 GHz Band*, 15 FCC Rcd. 16127, ¶ 45 (2000) (“Based on our decisions today, system proponents will need to amend their applications or LOIs in order to receive continued consideration, even if the only amendment is an orbital debris narrative statement. . . . Therefore, we will provide 30 days after a summary of this *Report and Order* is published in the Federal Register for system proponents to amend their filings”); Public Notice, “International Bureau Invites Applicants to Amend Pending V-Band Applications,” 19 FCC Rcd. 1531 (2004) (“Any application that is not amended will be dismissed as defective because it does not substantially comply with the Commission’s rules and regulations.”).

⁵⁷ *Amendment of the Commission’s Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands*, 9 FCC Rcd. 5936, ¶ 59 (1994).

Here, by contrast, OneWeb does not contend that its application no longer meets applicable requirements or would be subject to dismissal in the absence of the proposed amendment. It merely seeks to deploy additional satellites using additional frequencies in the hopes of better executing its evolving business plan. When the Commission adopted the new milestone regime, it invited modification applications to be considered in a subsequent processing round,⁵⁸ but did not require that any party amend pending applications or threaten dismissal for those who did not do so, as it had done in the cases OneWeb cites.⁵⁹ In fact, here the Commission explicitly declined to implement other forms of relief because they would “creat[e] undue uncertainty for other operators.”⁶⁰

This is not the first time the Commission has considered a belated attempt to circumvent a processing round regime based on a claim of regulatory “necessity” arising from a subsequent rule change. For example, after the cut-off date for an NGSO processing round, Starsys sought to amend its application in order to use an additional frequency band (the “150 MHz band”).⁶¹ Because such a request falls squarely within the definition of a major amendment, the application presumptively should have been treated as newly filed. However, the Commission had just completed a rulemaking applicable to the relevant NGSO service, in which it had indicated that “major amendments ‘necessary’ because of ‘obligations that we have imposed upon applicants after the cut-off date’ would be permitted without treating the application as newly filed.”⁶²

⁵⁸ See *NGSO Update Order*, ¶ 67 n.150 (“a licensee may request to modify its authorization at any time to deploy additional satellites,” and such applications will be treated as “applications filed after a processing round”).

⁵⁹ See *OneWeb Amendment* at 27 n.90.

⁶⁰ *Id.*

⁶¹ See *Starsys Global Positioning, Inc.*, 11 FCC Rcd. 1237 (IB 1995) (“*Starsys*”).

⁶² *Id.* ¶ 17 (quoting *Amendment of the Commission’s Rules to Establish Rules and Policies Pertaining to a Non-Voice, Non-Geostationary Mobile-Satellite Service*, 8 FCC Rcd. 8450, ¶ 26 (1993)).

Although Starsys claimed that its request fell within this exception, the Commission concluded to the contrary. The Commission noted that, although the rulemaking had made the 150 MHz band available on a secondary basis in certain situations, it did not impose an obligation on applicants to use that band.⁶³ Moreover, although Starsys may not have foreseen the availability of the 150 MHz band at the time it filed its original application, it gave no indication that it would not be able to operate its system using the bands it had requested.⁶⁴ Under these circumstances, the Commission rejected Starsys’s claim that the rulemaking order created “demonstrably necessary events” that required the use of the 150 MHz band and thus supported an amendment within the ongoing processing round.⁶⁵

The Commission similarly rejected a request by EchoStar to add 500 MHz of uplink and downlink spectrum to its satellite system well after a processing round cut-off date.⁶⁶ EchoStar argued, using logic closely parallel to OneWeb’s argument here, that it did not seek this spectrum in its initial application “because there was uncertainty over what downlink spectrum would be available,” and thus asked that its request be considered in the first processing round.⁶⁷ The Commission found that EchoStar’s application was “grossly untimely,” and went on to explain the importance of maintaining the integrity of the processing round regime:

The Commission’s processing round procedures require applicants to file proposals prior to the established deadline to ensure orderliness, expedition and finality in the

⁶³ *See id.* ¶ 19.

⁶⁴ *See id.* ¶ 20. In this case, OneWeb not only did not indicate that its system could not operate without the additional frequencies it now seeks to use, but affirmatively represented that “the description of the OneWeb V-band system provided in the V-band Petition is complete, accurate, and sufficient for the Commission and any interested parties to evaluate whether granting market access for the OneWeb V-band system is in the public interest.” Consolidated Response of WorldVu Satellites Limited, IBFS File No. SAT-LOI-20170301-00031, at 6 (July 27, 2017). Indeed, OneWeb has been granted an authorization based on the “comprehensive proposal” it submitted to the Commission for its Ku/Ka-band NGSO system. *See* 47 C.F.R. § 25.114 (a).

⁶⁵ *Starsys*, ¶ 20.

⁶⁶ *See EchoStar, supra.*

⁶⁷ *Id.* ¶ 3.

licensing process. In addition, these procedures serve important public purposes, including fairness among applicants and permits the rapid dispatch of Commission business. The Commission will waive deadlines only in extreme cases involving extraordinary circumstances.⁶⁸

In addition, the Commission rejected EchoStar's assertion that it should not be penalized for failure to have the "foresight" to request the additional spectrum in its original application, even though it now claimed that this spectrum was necessary to implement its business plan. The Commission noted that several other applicants had requested the spectrum at issue, and that EchoStar had other opportunities to request the spectrum, including reconsideration and a subsequent processing round. In these circumstances, it concluded that "grant of EchoStar's request for additional spectrum is particularly unwarranted."⁶⁹

OneWeb's amendment is indistinguishable from these cases. Like Starsys and EchoStar, OneWeb has filed a grossly untimely application that, if accepted, would undermine, complicate, and delay three ongoing NGSO processing rounds and prejudice other NGSO system applicants and licensees who filed timely applications. As in those cases, OneWeb laments the fact that it failed to seek a waiver or anticipate that the NGSO rules might be changed, even as it recognizes that other applicants "planned and proposed large constellations" that corresponded to their capabilities and business objectives, and then sought milestone waivers to support them.⁷⁰ And as in those cases, OneWeb chose not to seek reconsideration of its authorization once granted⁷¹ and

⁶⁸ *Id.* ¶ 5.

⁶⁹ *Id.* ¶ 6.

⁷⁰ *See* OneWeb Amendment at 26. Accordingly, this case does not fall within the exception for an amendment that "is demonstrably necessitated by events which the applicant could not have reasonably foreseen at the time of filing." 47 C.F.R. § 25.116(c)(4).

⁷¹ The Commission specifically invited OneWeb to take advantage of a rule that would allow OneWeb to defer compliance with the milestone condition until after the NGSO update proceeding had been resolved. *See OneWeb Authorization*, ¶ 12 n.46 ("OneWeb may petition for reconsideration of this grant to seek deferral of any of its conditions until after the Commission has made a determination on the relevant issues in the pending NGSO FSS rulemaking. *See* 47 CFR § 1.106(c)(2).")

now seeks to avoid consideration in a subsequent processing round – even though that is precisely what the Commission contemplated when it revised the NGSO milestone requirements.⁷²

Moreover, OneWeb has always maintained that it can deploy its hybrid LEO/MEO V-band system within the original six-year milestone requirement.⁷³ Despite this confidence, OneWeb does not explain its failure to include *any* MEO satellites in its original Ku/Ka-band system application, or its failure to file *any* application in the supplemental Ku/Ka-band processing round for spectrum it now seeks to use. Indeed, OneWeb now ironically claims that granting the very application that OneWeb originally submitted would be “deeply inequitable.”⁷⁴ Accordingly, changes made to the Commission’s NGSO deployment milestones in no way “necessitated” the proposed amendment.

B. OneWeb’s Amendment Would Increase the Potential for Interference

OneWeb argues that the addition of 1,280 satellites to the V-band MEO constellation (as well as 2,560 MEO satellites in the Ku/Ka-band) will make interference events less likely because, with more satellites in view from each earth station, there will be more opportunities to use satellite diversity as a coordination mechanism.⁷⁵ By this logic, if OneWeb were to increase its constellation by 128,000 satellites without making any mitigating operational or other improvements that would enhance spectrum efficiency, there would be even less reason for interference concerns. This argument is absurd on its face, and runs directly contrary to the

⁷² See *NGSO Update Order*, ¶ 67 n.150.

⁷³ See, e.g., OneWeb V-Band Application at 23 (stating that OneWeb “will launch and operate the complete OneWeb V-Band System within six years of grant of this Petition”).

⁷⁴ OneWeb Amendment at 26-27.

⁷⁵ See *id.* at 20.

Commission’s own longstanding recognition that more satellites can be expected to create the potential for more interference.

A system's orbital configuration can impact its ability to share with other systems and services by affecting the number of active satellites “visible” at a particular location. ***The magnitude of sharing difficulty increases with an increase in the number of active visible satellites in the modified system.*** Thus, a customer using another satellite system will have more difficulty operating with that system if the number of visible satellites in the modified system is increased.⁷⁶

Accordingly, while additional satellites create additional satellite diversity, OneWeb cannot ignore that – in the absence of other offsetting improvements⁷⁷ – they also increase the number of satellites in view from a given location that can cause interference.⁷⁸

Nor is this the only detrimental impact that grant of OneWeb’s amendment would have on other participants in the current NGSO processing rounds. For example, OneWeb’s MEO system already presents significant spectrum sharing challenges for LEO systems due to the high level of interference resulting from the disparity in the equivalent isotropically radiated power (“EIRP”) levels of their respective uplink transmissions.⁷⁹ When one NGSO system generates significant uplink interference for another, very large separation angles are required to reduce $\Delta T/T$ below the 6% threshold at which band splitting may be required. Large in-line angles not only increase the

⁷⁶ *Teledesic*, ¶ 13 (emphasis added). By contrast, the Commission has found that, even though “a reduction in the number of satellites may give [an NGSO operator] less flexibility to use satellite diversity, the number of potential interference events vis-à-vis other constellations will be reduced and, if no coordination agreement is reached with any of these constellations, the number of times those constellations will be required to reduce spectrum use will be smaller,” and thus such an amendment would not be considered major. *O3b Authorization Order*, ¶ 39.

⁷⁷ *Compare Orbital Communications Corp.*, 15 FCC Rcd. 1340, ¶¶ 7-8 (IB 1999) (finding that public interest would be served by approving modification because, although total number of satellites would increase, number in use would not, so there would be no change in overall spectrum utilization characteristics).

⁷⁸ As the discussion in this section demonstrates, this case does not fall within the exceptions for an amendment that “does not create new or increased frequency conflicts.” 47 C.F.R. § 25.116(c)(1) and (4).

⁷⁹ *See, e.g.*, Letter from William M. Wiltshire to Marlene H. Dortch, IB Docket No. 16-408, at 3-4 and Attachment at 2-6 (Sep. 15, 2017); Comments of Space Exploration Technologies Corp., IBFS File No. SAT-AMD-20161115-00116, at 3-8 (June 26, 2017); Comments of Space Exploration Technologies Corp., IBFS File No. SAT-PDR-20161115-00120, at 4-9 (June 26, 2017).

necessary instances of band-splitting by expanding the geographic area of coverage affected, but they also increase the likelihood of simultaneous in-line events involving three or more systems, further exacerbating the problem. In extreme cases, there is simply no separation angle that can achieve the $\Delta T/T$ of 6% for uplink. This effectively places the entire geographic coverage area of a satellite within the in-line event and precludes the use of beam steering to avoid the issue. OneWeb's amendment would therefore not merely increase potential interference, but may trigger the least desirable of all spectrum sharing scenarios, with permanent spectrum splitting and, as a result, highly inefficient spectrum usage, contrary to the interest of all NGSO operators and the public.

At present, OneWeb's Ku/Ka-band NGSO system has no MEO component. If the amendment were granted, however, SpaceX and other LEO systems would have to take on the additional burden of coordinating with this MEO system. This would clearly disadvantage all LEO systems in the relevant Ku/Ka-bands, which at present do not have to consider any uplink interference from OneWeb MEO satellites. Moreover, allowing OneWeb to make a back-door spectrum grab well after the cut-off date for the NGSO processing rounds would penalize those applicants that followed the rules and made timely filings. OneWeb totally ignores these detrimental effects, but the prejudice to other applicants provides yet another basis for denying the requested waiver.

Moreover, as the Commission has made clear, the issue is whether the proposed amendment will increase the *potential* for interference. For example, when Final Analysis proposed to increase the number of satellites in its NGSO system (from 26 to 32), it argued that this change would not increase interference to NOAA's satellite system because there was only a very small chance that there would be more footprint overlaps between the Final Analysis and

NOAA systems during which both systems were transmitting at the same time on the same frequency.⁸⁰ The Commission rejected this argument, finding that it was “based upon [the] erroneous assumption that a major amendment is one that increases actual interference, rather than the *potential* for interference.”⁸¹ The Commission explained that each Final Analysis satellite has the potential to cause a footprint/frequency overlap, and therefore “an increase in the number of Final Analysis satellites increase the potential number of such violations.”⁸² The same is true with respect to OneWeb’s proposal to add 1,280 more MEO satellites to its V-band system and 2,560 more MEO satellites to its Ku/Ka-band system.

OneWeb asserts that no applicant would be prejudiced by consideration of its amendment in the pending Ku/Ka-band NGSO processing round.⁸³ Yet as discussed above, significant interference concerns result from EIRP disparities between LEO and MEO systems. By adding a large and entirely new MEO component to a system that currently has none – as well as in two rounds where it currently has no application whatsoever pending – OneWeb would introduce this interference concern, to the detriment of all LEO systems operating in the affected bands. More generally, the proposed amendment would greatly multiply the number of in-line events and thereby substantially increase the potential for interference if OneWeb were afforded equal status with other participants in the ongoing processing rounds. Given this dramatic impact on other operators, the Commission must defer consideration of OneWeb’s amendment to a subsequent processing round.

⁸⁰ See *Final Analysis Communications Services, Inc.*, 16 FCC Rcd. 21463, ¶ 24 (2001).

⁸¹ *Id.* ¶ 26 (emphasis in original).

⁸² *Id.*

⁸³ See OneWeb Amendment at 25.

C. OneWeb’s Request to Use E-Band Spectrum Should Initiate a New Processing Round

OneWeb’s request for authority to use E-band spectrum is not only a new band with respect to OneWeb’s applications, but also a new band not previously requested to date by any NGSO operator. As such, it presents a paradigm case for initiating a new processing round. Under Section 25.157(c) of the Commission’s rules, such “lead applications” that are deemed acceptable for filing are to be placed on public notice to initiate a processing round and establish a cut-off date for competing applications. This allows all parties interested in deploying NGSO systems in the band to participate on an equal footing.

OneWeb seeks a waiver of the Commission’s processing round rules based on the claim that its use of the E-band would not create a risk of interference to other present or future users of the spectrum.⁸⁴ Yet OneWeb bases this assertion upon a generalized belief in its ability to coordinate with other spectrum users. At the same time, its application reveals that OneWeb intends to employ a novel “reverse band” use of the 71-76 GHz band that is inconsistent with the U.S. and international allocations,⁸⁵ which therefore might pose an interference risk to a system operating in conformance with those allocations. Given that other potential operators have demonstrated interest in the E-band,⁸⁶ the Commission should initiate a processing round so that the interests of all parties can be appropriately considered and protected.

⁸⁴ *See id.* at 21.

⁸⁵ *See id.*, Attachment A at 47.

⁸⁶ *See, e.g.*, Jon Brodtkin, “Facebook follows SpaceX and OneWeb into high-speed satellite broadband,” *Ars Technica* (July 23, 2018) (discussing Facebook’s plans to launch an E-band NGSO satellite), *available at* <https://arstechnica.com/information-technology/2018/07/facebook-follows-spacex-and-oneweb-into-high-speed-satellite-broadband/>; Application, ELS File No. 0353-EX-CN-2018 (Apr. 26, 2018) (seeking experimental authority for an NGSO satellite using E-band spectrum).

III. THE COMMISSION SHOULD REQUIRE ONEWEB TO PROVIDE COMPLETE INFORMATION ON ORBITAL DEBRIS MITIGATION AND END-OF-LIFE DISPOSAL PLANS BEFORE ACTING ON THE PROPOSED AMENDMENT

OneWeb proposes to double the number of MEO satellites in its proposed V-band constellation (from 1,280 to 2,560), which also involves the addition of these 2,560 MEO satellites to its previously-authorized Ku/Ka-band constellation. Nonetheless, it has provided the Commission with no information to address the obvious orbital debris and space operational safety concerns that correspond with such a significant augmentation of its orbital assets. When the Commission adopted orbital debris mitigation rules, it concluded that the public interest is served by requiring those seeking access to the U.S. market “to submit the same information concerning the orbital debris mitigation plans of the non-U.S.-licensed space station as that submitted by U.S.-licensed space stations.”⁸⁷ It found that some consideration of this issue is appropriate, “regardless of the licensing Administration, in order to ensure that the satellite communications activity that we authorize does not involve substantial safety concerns or activities that may be detrimental to space operations.”⁸⁸ Accordingly, the Commission’s rules generally require those seeking access to the U.S. market to provide a comprehensive description of the design and operational strategies they intend to use to mitigate orbital debris, including post-mission disposal plans for space stations at the end of life.⁸⁹

In its original V-band application, OneWeb did not provide any information on orbital debris issues. Instead, it argued that it was subject to an exception to the general rule because its system “is subject to direct and effective regulatory oversight by the United Kingdom’s regulatory

⁸⁷ *Mitigation of Orbital Debris*, 19 FCC Rcd 11567, ¶ 93 (2004) (“*Orbital Debris Order*”).

⁸⁸ *Id.* ¶ 86.

⁸⁹ *See* 47 C.F.R. §§ 25.114(d)(14) (discussing required orbital debris showing), 25.137(b) (requiring non-U.S. systems to provide the legal and technical information called for under Section 25.114).

authorities, including particularly the U.K. Space Agency.”⁹⁰ Despite the significant increase in satellites proposed in this amendment, OneWeb continues to cite that exception rather than provide information on its orbital debris mitigation strategies.⁹¹

The Commission cannot allow OneWeb’s cavalier attitude on orbital debris mitigation to stand. The exception in Section 25.114(d)(14)(v) cited by OneWeb is not self-executing. Rather, a petitioner is required to indicate the current status of the national licensing authority’s review of its debris mitigation plans.⁹² The Commission has made clear that the mere prospect of regulatory review by another administration at some point in the future is not sufficient. Thus, for example, the Commission dismissed as defective a petition by New Skies Satellites, B.V. (“New Skies”) to serve the U.S. market using the SES-4 satellite, authorized by the Netherlands, due to deficiencies in its orbital debris mitigation showing. In addition to failing to provide the Netherlands’ debris mitigation guidelines, New Skies did not provide “the current status of the Netherlands’ review of the specific debris mitigation plans for the SES-4 space station.”⁹³ The Commission advised that, in order to provide the information necessary to determine whether granting market access would serve the public interest, “New Skies must state whether the licensing administration for SES-4 has *reviewed and affirmatively approved the specific debris mitigation plans* for the SES-4 space station set forth in New Skies’ application.”⁹⁴

⁹⁰ See OneWeb V-Band Application at 22 (citing 47 C.F.R. § 25.114(d)(14)(v)).

⁹¹ OneWeb Amendment at 17.

⁹² *Orbital Debris Order*, ¶ 95.

⁹³ *John K. Hane, Esq.*, 26 FCC Rcd. 7996, 7997 (IB 2011).

⁹⁴ *Id.* (emphasis added). See also *Carlos M. Nalda*, 28 FCC Rcd. 1050, 1051 (IB 2013) (dismissing an application to modify a blanket license for communications with non-U.S. licensed satellites where the applicant failed to provide “an indication as to whether the licensing authority has reviewed and affirmatively approved specific debris mitigation plans for the spacecraft”).

By construing Section 25.114 in this way, the Commission ensures that the exception only applies in cases where another licensing administration with a robust debris mitigation oversight regime has received complete information from the licensee, thoroughly evaluated it, and actually concluded that the proposed plan will promote the safe use of space. Deferring to another regulator in such circumstances may be considered a reasonable application of international comity. By comparison, deferring without indication that the responsible regulator has yet received such information (much less approved it) would be an abdication of the Commission’s responsibilities.

Contrary to this requirement, OneWeb has not indicated that it has provided the U.K. authorities any such information to consider on its proposed expanded constellation, or that its specific debris mitigation plans have been reviewed and approved. Indeed, according to information submitted by OneWeb with its original application, the U.K. regulator does not require submission of any information on orbital debris mitigation and post-mission disposal until six months before launch or operation.⁹⁵ While OneWeb may anticipate that the U.K. will issue Space Activity Licenses for its system before the initial launch of its satellites,⁹⁶ there is no indication that OneWeb has filed any application for such licenses or any related information on orbital debris mitigation, and the Commission would be remiss in assuming so in this proceeding.

Given the scope of OneWeb’s proposed modification – adding 1,280 satellites to its V-band constellation (and 2,560 satellites to its Ku/Ka-band constellation) – safe operation and disposal of these space objects will be crucial. Yet at present, the Commission lacks the information necessary to make this critical assessment. Granting such a system access to the U.S.

⁹⁵ See Letter from Kalpak S. Gude to Marlene H. Dortch, IBFS File No. SAT-LOI-20160428-00041, Attachment “Revised Guidance for Applicants—Outer Space Act 1986,” at 2 (June 24, 2016) (“OneWeb Supplemental Response”) (“Applications should be submitted at least six months in advance of any plans for launch or operation.”).

⁹⁶ See OneWeb V-Band Application at 16, n.49.

market before *any* administration has received complete orbital debris information would create a serious risk to all space-based systems, as there would be no assurance that the operator had thoroughly evaluated strategies for minimizing or eliminating orbital debris and for safely and efficiently disposing of spacecraft at the end of their useful lives. Such an outcome would not serve the public interest, and can easily be avoided by enforcing the Commission's rules that require submission and evaluation of this information before a U.S. authorization can be issued.

CONCLUSION

Like the Commission, SpaceX recognizes that NGSO satellite operators must be allowed to modify their systems in response to advances in technology and changes in market conditions. However, they must do so in a manner consistent with the Commission's rules. The OneWeb Amendment violates the Commission's prohibition on ownership of multiple proposed NGSO systems operating in the same band. Moreover, even if OneWeb were allowed to circumvent that prohibition, the Commission's rules specify that its application for more satellite and spectrum assets would have to be considered in new processing rounds rather than the ones currently ongoing. OneWeb has proposed changes to its NGSO systems that would have a significant adverse effect on other NGSO systems. It has failed to show the extraordinary circumstances necessary to justify a waiver of the rules designed to prevent spectrum speculation, protect the integrity of the processing round regime, and ensure fair and timely consideration for all qualified applicants. In these circumstances, the Commission should dismiss the Amendment or, if it is allowed to proceed, defer OneWeb's NGSO applications for consideration in follow-on processing rounds.

Respectfully submitted,

SPACE EXPLORATION HOLDINGS, LLC

William M. Wiltshire
Paul Caritj
HARRIS, WILTSHIRE & GRANNIS LLP
1919 M Street, N.W.
Suite 800
Washington, DC 20036
202-730-1301 tel
202-730-1301 fax

Counsel to SpaceX

By: /s/ Tim Hughes
Tim Hughes
Senior Vice President, Global Business
and Government Affairs

Patricia Cooper
Vice President, Satellite Government
Affairs
SPACE EXPLORATION TECHNOLOGIES CORP.
1155 F Street, N.W.
Suite 475
Washington, DC 20004
202-649-2700 tel
202-649-2701 fax

August 6, 2018

CERTIFICATE OF SERVICE

I hereby certify that, on this 6th day of August, 2018, a copy of the foregoing Petition to Deny or Defer was served by First Class mail upon:

Brian Weimer
Douglas Svor
Ashley Yeager
Sheppard Mullin Richter & Hampton LLP
2099 Pennsylvania Avenue, N.W.
Suite 100
Washington, DC 20006

Mariah Shuman
Senior Director of Regulatory Affairs
WorldVu Satellites Limited
1400 Key Boulevard
Suite A1
Arlington, VA 22209

/s/ Samuel D. Sperling
Samuel D. Sperling