

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

In the Matter of)	
)	
WorldVu Satellites Limited)	SAT-LOI-20170301-00031; Call Sign S2994
)	
Audacy Corporation)	SAT-LOA-20161115-00117; Call Sign S2982
)	
ViaSat, Inc.)	SAT-PDR-20161115-00120; Call Sign S2985
)	
Theia Holdings A, Inc.)	SAT-AMD-20170301-00029; Call Sign S2986
)	
NGSO-Like Satellite Applications or Petitions for)	
U.S. Market Access in the 37.5-40.0 GHz, 40.0-)	
42.0 GHz, 47.2-50.2 GHz and 50.4-51.4 GHz Bands)	

REPLY OF SES S.A. AND O3B LIMITED

SES S.A. (“SES”) and its subsidiary O3b Limited (“O3b”), hereby submit this reply regarding the above-captioned non-geostationary orbit (“NGSO”) satellite license applications and requests for authority to serve the U.S. market (collectively, the “V-band NGSO Filings”). The record before the Commission supports the SES and O3b arguments regarding the importance of ensuring that geostationary orbit (“GSO”) networks are protected from interference caused by any new V-band NGSO operations.¹ There is no consensus, however, on how to define and implement GSO protection criteria in this spectrum in the near term. Given the critical nature of this issue and the need for a unified approach for all V-band systems, SES and O3b urge the Commission to defer action on the V-band NGSO Filings until appropriate standards to prevent interference to V-band GSO systems are in place.

¹ Comments of SES S.A. and O3b Limited, File Nos. SAT-LOI-20170301-00031 *et al.*, dated July 17, 2017 (“SES/O3b Comments”) at 3-4.

I. THE COMMISSION MUST ADOPT RULES TO PROTECT GSO OPERATIONS BEFORE ACTING ON THE V-BAND NGSO FILINGS

Like SES and O3b, a number of other parties emphasize that it is essential for the Commission to facilitate robust use of V-band spectrum by ensuring that deployment of NGSO systems does not pose an obstacle to shared GSO use of the frequencies.² Yet the filers also observe that currently neither the International Telecommunication Union (“ITU”) nor the Commission has developed a framework to enable sharing between NGSO and GSO systems in V-band spectrum.³ Article **22.2** of the ITU Radio Regulations imposes a general requirement that NGSO systems shall not cause unacceptable interference to, and must not claim protection from, GSO networks. However, unlike in the Ka-band frequencies, equivalent power flux density (“EPFD”) limits have not been developed for V-band NGSO operations. As noted in the SES/O3b Comments, V-band NGSO-GSO sharing matters are being studied in preparation for the 2019 World Radio Conference (“WRC”) pursuant to Resolution **159 (WRC-15)**, and O3b is supporting those efforts.⁴

² See, e.g., Comments of Hughes Network Systems, LLC, File Nos. SAT-LOA-20160622-00058 *et al.*, dated July 17, 2017 (“Hughes Comments”) at 2 (urging the Commission “to take action to ensure meaningful spectrum sharing between future GSO and NGSO operations”); Consolidated Comments of ViaSat, Inc., File Nos. SAT-LOA-20161115-00117 *et al.*, dated July 17, 2017 (“ViaSat Comments”) at 3 (the Commission should ensure that grant of any NGSO application in the processing round “does not preclude or impede deployment of GSO systems in the V band”); Comments of Space Exploration Holdings, LLC, File Nos. SAT-LOA-20161115-00117 *et al.*, dated July 17, 2017 (“SpaceX Comments”) at 1 (“it is time for the Commission to set expectations for spectrum sharing among all users” of V-band frequencies, including both GSO and NGSO operators); Response of Audacy Corporation, File No. SAT-LOA-20161115-00117, dated July 27, 2017 (“Audacy Response”) at 3 (“Audacy appreciates the need to maintain the utility of the V-band by protecting GSO networks” from interference).

³ See, e.g., SES/O3b Comments at 3; Hughes Comments at 2.

⁴ SES/O3b Comments at 3.

Parties agree that a Commission rulemaking is the appropriate vehicle to implement specific standards for NGSO protection of GSO systems.⁵ However, pending the initiation of such a rulemaking, there are a variety of views regarding how protection of GSO systems should be handled for purposes of the V-band NGSO Filings.

Hughes suggests that the Commission “consider applying interim or default EPFD limits comparable to the EPFD limits specified in Article 22 of the ITU Radio Regulations.”⁶ OneWeb, however, objects to that proposal, arguing that Commission adoption of interim EPFD limits before the ITU has acted on NGSO-GSO sharing matters would be “premature,” and contending that there “is currently no sound technical basis for establishing interim EPFD limits.”⁷ OneWeb opposes any Commission efforts to undertake its own studies to develop V-band EPFD limits while the ITU preparatory process is ongoing, stating that such activities “would be duplicative and an inefficient use of Commission resources.”⁸ OneWeb urges the Commission to await the completion of the ITU studies to be considered at WRC-19 before adopting any rules regarding V-band NGSO-GSO sharing.⁹ Instead, OneWeb states that it “will coordinate in good faith with the operators of future V-band GSO systems to the extent the rules

⁵ See, e.g., Hughes Comments at 2; Consolidated Reply Comments of Theia Holdings A, Inc., File No. SAT-AMD-20170301-00029, dated Aug. 1, 2017 at 2; Consolidated Response of ViaSat, Inc. File No. SAT-PDR-20161115-00120, dated Aug. 1, 2017 (“ViaSat Response”) at 8 (agreeing with Hughes that NGSO-GSO sharing matters in the V-band should be addressed in a rulemaking, but arguing that rather than starting a new proceeding, the Commission should address the issues in the pending NGSO rulemaking in IB Docket No. 16-408).

⁶ Hughes Comments at 2 (footnote omitted).

⁷ Consolidated Response of WorldVu Satellites Limited, File No. SAT-LOI-20170301-00031, dated July 27, 2017 (“OneWeb Response”) at 3.

⁸ *Id.*

⁹ *Id.* at 3 n.4.

developed by the Commission require coordination, or will abide by any limits (such as EPFD limits) developed for NGSO operators in the V-band by the Commission or the ITU.”¹⁰

Other filers suggest that the Commission should make any grant of a V-band NGSO Filing subject to future rules adopted by the Commission regarding NGSO-GSO sharing. Audacy, for example, states that it “anticipates a license condition limiting V-band EPFD,” and expresses confidence that its network will meet EPFD limits comparable to those in Ka-band spectrum.¹¹ Similarly, ViaSat argues that Commission action on any of the V-band NGSO Filings, including its own request for U.S. market access, should be subject to the outcome of future Commission proceedings addressing sharing matters.¹² The SES/O3b Comments take the same approach, proposing that a condition be imposed on all V-band NGSO authorizations requiring compliance with applicable EPFD limits, including aggregate limits, in order to ensure protection of GSO operations.¹³

While conditioning grants on the outcome of future rulemaking proceedings on V-band NGSO-GSO sharing would be the minimum step necessary to ensure future GSO systems will be protected, SES and O3b urge the Commission instead to defer action on the V-band NGSO Filings pending adoption of a comprehensive NGSO-GSO sharing framework. SES and O3b recognize that in the Ku/Ka-band NGSO processing round, the Commission determined that it could act on the OneWeb application in advance of completing the related rulemaking

¹⁰ *Id.* at 2-3.

¹¹ Audacy Response at 3-4.

¹² ViaSat Response at 1-2.

¹³ SES/O3b Comments at 3-4 & 6.

addressing Ka-band NGSO operational matters.¹⁴ However, in those frequencies, the Commission could rely on international EPFD limits already in place, and the OneWeb authorization specifically required compliance with those international limits.¹⁵ In addition, the Commission had already developed a full record in response to its comprehensive set of proposals in the NGSO rulemaking proceeding.¹⁶ In contrast, the effort to develop protection criteria for V-band GSO systems is still at a very early stage, with adoption of any ITU standards still years away and no pending Commission rulemaking that is examining V-band NGSO-GSO sharing.

In light of these differences, acting on the V-band NGSO Filings subject to the outcome of future proceedings would create unnecessary uncertainty for NGSO and GSO systems alike. A V-band NGSO applicant that received a grant would have to decide whether to accept the authority conferred without any meaningful guidance regarding the requirements that would ultimately apply to its system in order to prevent harmful interference to GSO networks. Operators developing GSO systems in the V-band would similarly have no concrete assurances regarding how and to what extent their future systems will be protected from interference.¹⁷

¹⁴ *WorldVu Satellites Limited Petition for a Declaratory Ruling Granting Access to the U.S. Market for the OneWeb NGSO FSS System*, File No. SAT-LOI-20160428-00041, Order and Declaratory Ruling, FCC 17-77 (rel. June 23, 2017) (“OneWeb Grant”) ¶ 12.

¹⁵ *See id.*, ¶ 23(h) (OneWeb’s authority is conditioned on its compliance with EPFD requirements in Article 22 of the ITU Radio Regulations).

¹⁶ *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, Notice of Proposed Rulemaking, 31 FCC Rcd 13651 (2016) (“NGSO NPRM”).

¹⁷ *See Hughes Comments at 1-2* (noting that Hughes has an application pending before the Commission for a GSO satellite that will operate in V-band spectrum and needs assurance that the Commission will implement meaningful spectrum sharing requirements).

As the Commission made clear in the OneWeb Grant, a Commission rulemaking is the appropriate proceeding in which to make “decisions of general applicability.”¹⁸ Any Commission attempt to address NGSO-GSO sharing matters in the context of individual application proceedings would violate that principle and put the cart before the horse. Prior to authorizing V-band NGSO systems for operations in the U.S., the Commission must establish a framework for NGSO-GSO sharing based on a fully developed record. Until such a framework is in place, the Commission should hold the V-band NGSO Filings in abeyance.

II. CONCLUSION

For the foregoing reasons, the Commission should defer action on the V-band NGSO Filings pending adoption of rules and policies for NGSO-GSO sharing in this spectrum.

Respectfully submitted,

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¹⁸ OneWeb Grant, ¶ 12.

CERTIFICATE OF SERVICE

I hereby certify that on this 11th day of August, 2017, I caused to be served a true copy of the foregoing "Reply of SES S.A. and O3b Limited" by first class mail, postage prepaid, upon the following:

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