

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

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| In the Matter of                                  | ) |   |
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| Space Exploration Holdings, LLC                   | ) | SAT-LOA-20170301-00027; Call Sign S2992 |
|   | ) |   |
| Telesat Canada                                    | ) | SAT-PDR-20170301-00023; Call Sign S2991 |
|   | ) |   |
| 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 application and request for authority to serve the U.S. market (collectively, the “V-band NGSO Filings”).<sup>1</sup> 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 and that clear obligations are imposed regarding sharing among co-frequency NGSO systems.<sup>2</sup> Given the critical nature of these issues and the need for a unified approach for all V-band systems, SES and O3b urge the Commission to either defer action on the V-band NGSO Filings until appropriate sharing standards are in place or at a minimum consider Telesat’s proposal for suspension of bond and milestone requirements pending adoption of a sharing framework. In addition, the Commission should fairly apply its milestone policies to all applicants.

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<sup>1</sup> *Space Exploration Holdings, LLC*, File No. SAT-LOA-20170301-00027 (the “SpaceX Application”); *Telesat Canada*, SAT-PDR-20170301-00023 (the “Telesat Petition”).

<sup>2</sup> Comments of SES S.A. and O3b Limited, File Nos. SAT-LOI-20170301-00031 *et al.*, dated September 25, 2017 (“SES/O3b Comments”) at 3-6.

## I. THE COMMISSION MUST ADOPT SHARING RULES 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.<sup>3</sup> Yet the filers in this round 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.<sup>4</sup> 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 SES and O3b are supporting those efforts.<sup>5</sup>

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<sup>3</sup> Response to Comments of Space Exploration Holdings, LLC, File No. SAT-LOA-20170301-00027, dated October 10, 2017 (“SpaceX Response”) at 4-5; Response to Comments of Telesat Canada, File No. SAT-PDR-20170301-00023, dated October 11, 2017 (“Telesat Response”) at 3-4.

<sup>4</sup> *See, e.g.*, SES/O3b Comments at 3; Consolidated Comments of ViaSat, Inc., File Nos. SAT-AMD-20170301-00026 *et al.*, dated Sept. 25, 2017 (“ViaSat Comments”) at 6 (“appropriate single-entry and aggregate EPFD limits, in both the uplink and downlink directions, also could be an effective means to protect GSO systems in the V band” but “no such limits currently exist, either in the Commission’s rules or internationally”); SpaceX Response at 4 (“No specific sharing criteria have been adopted by either the Commission or the International Telecommunication Union (“ITU”) to outline how proposed NGSO and GSO operations in the V-band will be expected to co-exist.”); Telesat Response at 5 (no established NGSO-GSO sharing criteria exist for V-band); Comments of Hughes Network Systems, LLC, File Nos. SAT-PDR-20170301-00023 *et al.*, dated Sept. 25, 2017 (“Hughes Comments”) at 2.

<sup>5</sup> 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.<sup>6</sup> 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.”<sup>7</sup> SpaceX and Telesat, however, object to that proposal, arguing that the Commission does not have a technical basis to determine appropriate EPFD limits for V-band operations.<sup>8</sup> SES and O3b agree that it would be premature for the Commission to adopt or impose EPFD limits “comparable”<sup>9</sup> to those applicable to Ka-band spectrum given that the necessary analysis to support development of such limits in V-band frequencies has not yet been completed.

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. ViaSat argues that Commission action on any of the V-band NGSO Filings should be subject to the outcome of future Commission proceedings addressing sharing matters.<sup>10</sup> Telesat takes a similar position, arguing that V-band grants should be conditioned on complying with future service rules once adopted.<sup>11</sup>

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<sup>6</sup> *See, e.g.*, Hughes Comments at 2; Telesat Response at 3.

<sup>7</sup> Hughes Comments at 2 (footnote omitted).

<sup>8</sup> SpaceX Response at 5 n.8; Telesat Response at 5.

<sup>9</sup> Hughes Comments at 2.

<sup>10</sup> ViaSat Comments at 7-8.

<sup>11</sup> Telesat Response at 3-4.

SES and O3b continue to urge the Commission to defer action on the V-band NGSO Filings pending adoption of a comprehensive NGSO-GSO sharing framework. As we indicated in our comments, the effort to adopt protection criteria for V-band GSO systems is still at a preliminary stage, with no action expected on ITU standards for several years and no Commission rulemaking yet under way to address NGSO-GSO sharing in this spectrum.<sup>12</sup> As a result, authorizing V-band NGSO operations subject to the outcome of future international and domestic decisions on sharing would create needless uncertainty for both NGSO and GSO systems. Specifically, V-band NGSO systems would lack meaningful guidance regarding any limitations on their operations that will be needed to comply with future requirements for avoiding harmful interference to GSO networks, and prospective V-band GSO network operators would be unsure how and to what extent their systems will ultimately be protected from interference.<sup>13</sup> Given clear Commission precedent that a rulemaking is the appropriate forum for making “decisions of general applicability,”<sup>14</sup> the Commission must put in place a framework for NGSO-GSO sharing based on a fully developed record before it acts on the V-band NGSO Filings.

At a minimum, to avoid the inherent uncertainty for satellite operators who may be forced to commit to design of a GSO or NGSO system without knowledge of inevitable regulatory protections or constraints, the Commission should consider the proposal set forth in Telesat’s Response. Telesat suggests that the Commission “suspend bond requirements and its

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<sup>12</sup> SES/O3b Comments at 4.

<sup>13</sup> 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).

<sup>14</sup> OneWeb Grant, ¶ 12.

associated milestone clock until the ITU has developed NGSO-GSO sharing criteria, anticipated in 2019, and the Commission has adopted sharing criteria for U.S. operations.”<sup>15</sup> This approach would relieve prospective V-band operators from the requirement to push ahead with system implementation pending development of substantive requirements relating to sharing. Thus, if the Commission is determined to act on V-band NGSO Filings pending adoption of an NGSO-GSO sharing framework, SES and O3b urge the Commission to consider the Telesat recommendation for deferral of bond and milestone obligations.

## **II. ANY MILESTONE WAIVER BASED ON LAUNCH AVAILABILITY LIMITATIONS SHOULD BE EVEN-HANDEDLY APPLIED**

SpaceX asserts that it should be granted a waiver of the Commission’s milestone requirements in anticipation of a likely shortage of available launches for its constellation.<sup>16</sup> If the limitations of the launch industry become a problem for any operator, then all operators will inevitably be affected. Any potential shortage of launch capacity will be felt industry-wide and will not have an exclusive impact on certain operators. Therefore, to the extent the Commission grants milestone relief based on a shortage in launch capacity, such relief should be available to all applicants.

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<sup>15</sup> Telesat Response at 5.

<sup>16</sup> SpaceX Response at 22.

### III. CONCLUSION

For the foregoing reasons, the Commission should defer action on the V-band NGSO Filings until sharing rules for this spectrum are in place, or at least consider Telesat's proposal for suspending bond and milestone obligations pending adoption of a sharing framework. The Commission should not favor any individual NGSO operator in the application of its milestone policies.

Respectfully submitted,

#### **SES S.A. AND O3B LIMITED**

Of Counsel  
Karis A. Hastings  
SatCom Law LLC  
1317 F Street, N.W., Suite 400  
Washington, D.C. 20004  
[karis@satcomlaw.com](mailto:karis@satcomlaw.com)

By: /s/ Gerald E. Oberst  
Senior Vice President, Global Regulatory and  
Governmental Strategy, SES S.A.  
1129 20th Street N.W., Suite 1000  
Washington, D.C. 20036

By: /s/ Suzanne H. Malloy  
Vice President, Regulatory Affairs, O3b Limited  
900 17th Street, N.W.  
Washington, D.C. 20006

October 23, 2017

**CERTIFICATE OF SERVICE**

I hereby certify that on this 23rd day of October, 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:

Henry Goldberg  
GOLDBERG, GODLES, WIENER & WRIGHT,  
LLP  
1025 Connecticut Avenue, N.W.  
Washington, DC 20036  
Counsel to Telesat

Elisabeth Neasmith  
Director, Spectrum Management and  
Development  
1601 Telesat Court  
Ottawa, Ontario  
Canada, K1B 5P4

William Wiltshire  
HARRIS, WILTSHIRE & GRANNIS LLP  
1919 M Street, N.W. Suite 800  
Washington, DC 20036  
Counsel to SpaceX

Tim Hughes  
SPACE EXPLORATION TECHNOLOGIES  
CORP.  
1030 15th Street, NW Suite 220E  
Washington, DC 20005

/s/  
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Will Lewis