

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

In the Matter of	)	
	)	
Telesat Canada	)	File No. SAT-PDR-20170301-00023
	)	
Petition for Declaratory Ruling to Grant	)	
Access to the U.S. Market for Telesat's	)	
V-Band NGSO Constellation	)	
	)	

**CONSOLIDATED RESPONSE OF TELESAT CANADA**

In the above-referenced Petition for Declaratory Ruling (“Petition”), Telesat Canada (“Telesat”) seeks access to the U.S. market for Telesat’s planned low earth orbit (“LEO”), V-band non-geostationary satellite orbit (“NGSO”) satellite system (the “Telesat LEO Constellation” or “LEO Constellation”). Telesat’s Petition is one of several applications and petitions (collectively, the “Applications”) regarding V-band NGSO satellite systems that have been accepted for filing by the Commission and that are subject to the same or a recently concluded comment period.<sup>1</sup>

Telesat’s LEO Constellation will be comprised of over 100 advanced satellites that will deliver high-capacity, high-speed, low-latency data services with a distributed space architecture designed to enhance network security and resiliency and the ability to provide coverage anywhere in the world. The innovative design combines polar and

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<sup>1</sup> See *Public Notice*, Satellite Policy Branch Information, Space Station Applications Accepted for Filing, Report No. SAT-01245 (rel. Jun 16, 2017); See also *Public Notice*, Satellite Policy Branch Information, Space Station Applications Accepted for Filing, Report No. SAT-01262 (rel. Aug. 25, 2017). As used herein, references to “V-band” include Q-band frequencies that are proposed to be employed by these constellations.

inclined orbits and incorporates advanced technologies that will make effective and efficient use of V-band spectrum to bring needed services to the public, including many presently underserved areas.

Hughes Network Systems, LLC (“Hughes”), ViaSat, Inc. (“ViaSat”), SES S.A. and its subsidiary O3b Limited (“SES/O3b”), and Space Exploration Holdings, LLC (“SpaceX”) submitted comments to the Commission regarding various NGSO petitions and applications in this processing round, including Telesat’s Petition.<sup>2</sup> Telesat hereby

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<sup>2</sup> Letter from Jennifer A. Manner and Brennan Price, Hughes Network Systems, LLC to Marlene H. Dortch, FCC, *re Applications and U.S. Market Access Petitions for Q/V-band NGSO Systems IBFS File Nos. SAT-PDR-20170301-00023, SAT-AMD-20170301-00026 & SAT-LOA-20170301-00027* (Sep. 25, 2017) (“*Comments of Hughes*”); *Consolidated Comments of ViaSat, Inc.*, in re O3b Limited IBFS File No. SAT-AMD-20170301-00026 Call Sign S2935, Space Exploration Holdings, LLC IBFS File No. SAT-LOA-20170301-00027 Call Sign S2992, Telesat Canada IBFS File No. SAT-PDR-20170301-00023 Call Sign S2991 (Sep. 25, 2017) (“*Comments of ViaSat*”); *See Comments of SES S.A. and O3B Limited*, in re 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 (Sep. 25, 2017) (“*Comments of SES/O3b*”); *Comments of Space Exploration Holdings, LLC*, in re Telesat Canada Petition for Declaratory Ruling to Grant Access to the U.S. Market Access for Telesat’s V-band NGSO Constellation, File No. SAT-PDR-20170301-00023 FCC Call sign S2991 (Sep. 25, 2017) (“*SpaceX Telesat Comments*”). References herein to the Comments of Hughes, ViaSat, SES/O3b, and SpaceX, unless otherwise stated, as applicable, refer to the preceding filings, generally the “*Comments*”. *See also* Letter from Jennifer A. Manner and Brennan Price, Hughes Network Systems, LLC to Marlene H. Dortch, FCC, *re Applications and U.S. Market Access Petitions for Q/V-band NGSO Systems IBFS File Nos. SAT-LOA-20160622-00058, SAT-AMD-20170301-00030, SAT-LOI-20170301-00031, SAT-PDR-20161115-00120, SAT-LOA-20161115-00117, SAT-LOA-20161115-00121 & SAT-AMD-20170301-00029* (Jul. 17, 2017) (“*Hughes’ July Comments*”); *Consolidated Comments of ViaSat, Inc.*, in re Audacy Corporation IBFS File No. SAT-LOA-20161115-00117 Call Sign S2982, Theia Holdings A, Inc. IBFS File No. SAT-AMD-20170301-00029 Call Sign S2986, WorldVu Satellites Limited IBFS File No. SAT-LOI-20170301-00031 Call Sign S2994, (Jul. 17, 2017) (“*ViaSat’s July Comments*”); *Comments of Space Exploration Holdings, LLC*, in re Audacy Corporation IBFS File No. SAT-LOA-20161115-00117 Call Sign S2982, Theia Holdings A, Inc. IBFS File No. SAT-AMD-20170301-00029 Call Sign S2986, ViaSat, Inc. SAT-PDR-20161115-00120, WorldVu Satellites Limited IBFS File No. SAT-LOI-20170301-00031 Call Sign S2994 (Jul. 17, 2017) (“*SpaceX’s July Comments*”); *Comments of Space Exploration Holdings, LLC*, in re O3B Limited Amendment to Application to Modify U.S. Market Access Grant for the O3b Medium Earth Orbit Satellite System, File No. SAT-AMD-20170301-00026 FCC Call sign S2935 (Sep. 25, 2017) (“*SpaceX Comments on O3b Application*”).

responds to these comments (“Comments”) to the extent that they relate to Telesat’s Petition.

Telesat demonstrates that the Comments provide no basis for delaying a grant of Telesat’s Petition. Among other things, all involve matters that either have been addressed by the Commission in its most recent NGSO rulemaking proceeding,<sup>3</sup> are the subject of ongoing ITU technical studies, and/or, if to be addressed by the Commission, should be addressed in a general rulemaking proceeding designed to develop V-band service rules, including EPFD limits to protect geostationary satellite orbit (“GSO”) operations. As to the latter, Telesat has no objection to a condition being placed on a grant of its Petition, and urges that such a condition be placed on the grants of all applications in the V-band processing round (“V-band Grants”), making all such V-band Grants subject to compliance with the outcome of such a future rulemaking proceeding. In light of the uncertainties as to what NGSO-GSO sharing criteria will apply, moreover, the V-band Grants should temporarily defer implementation of bond and milestone requirements.

## I. DISCUSSION

### **A. All V-Band Grants Should Be Conditioned on Compliance with Such NGSO-GSO Protection Criteria as the Commission May Adopt**

A primary concern of most of the parties filing Comments involves the need to develop EPFD or other technical limits on NGSO operations to protect

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<sup>3</sup> See *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, Report and Order and Further Notice of Proposed Rulemaking, FCC 17-122 (rel. September 27, 2017) (“*NGSO Report and Order*”).

co-frequency V-band GSO operations.<sup>4</sup> These comments are not directed at any specific aspect of Telesat's planned LEO Constellation, rather they reflect a general call for such protection criteria to be developed and for V-band Grants to be conditioned on compliance with such rules once adopted. Telesat, itself, a longstanding operator of GSO satellites, shares these concerns. Accordingly, Telesat has no objection to such condition being placed on a grant of its Petition and urges that all V-band Grants be so conditioned.

While the more detailed elements of the matters addressed in the Comments on this subject are all ones that should be addressed (or, in some cases, have already been addressed) in a rulemaking proceeding of general applicability, Telesat briefly addresses these points below:

- Telesat, like SES/O3b, has been actively supporting ITU efforts to develop criteria for protecting GSO V-band systems, and, like SES-O3b, urges the Commission to take into account those criteria when they are developed.<sup>5</sup> As Telesat has consistently pointed out to the Commission, most NGSO FSS networks are designed to cover large territorial expanses and serve multiple regions of the world. Designing and operating international satellite systems to conform to different rules at different locations can lead to inefficient solutions and costly implementation. Therefore, harmonization of national rules to the widely-applicable ITU rules is good practice and should be done absent a compelling reason to do otherwise.<sup>6</sup>

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<sup>4</sup> *Comments of Hughes* at 2, *Comments of SES/O3b* at 3-6, *Comments of ViaSat* at 5-7. See also *Hughes' July Comments* at 2, *ViaSat's July Comments* at 3-6.

<sup>5</sup> See *SES/O3b Comments* at 3-7.

<sup>6</sup> See *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, IB Docket No. 16-408, *Comments of Telesat Canada* at 15 (filed Feb. 27, 2016) ("*Telesat NGSO NPRM Comments*").

- The Commission should reject Hughes' suggestion of interim EPFD limits for NGSO V-band systems that would be based on the existing Ku-band and Ka-band EPFD limits.<sup>7</sup> EPFD limits are band specific, based on technical studies. One cannot transplant them from one band to another.

- In its *NGSO Report and Order*, the Commission just rejected a proposal to defer the processing of pending NGSO applications until deliberations on additional NGSO-GSO sharing criteria, in the form of EPFD limits, are completed.<sup>8</sup> Accordingly, the Commission should reject the request of SES/O3b to defer action on the pending V-band applications until deliberations on additional NGSO-GSO sharing criteria are completed.<sup>9</sup>

- The circumstances in Ka-band, however, are different than those for V-band. There are established NGSO-GSO sharing criteria for Ka-band; no such criteria exist for V-band. Accordingly, while V-band Grants should be issued to enable V-band operators to begin work on their systems, it should be recognized that system design cannot be completed until NGSO-GSO sharing criteria are in place. The Commission, therefore, should suspend bond requirements and its 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.

- The Commission has adopted a rule requiring that NGSO licensees in various bands, including V-band, not cause unacceptable interference to GSO FSS networks.<sup>10</sup> Accordingly, Viasat's request for a license condition along these lines is unnecessary.<sup>11</sup> Further, ViaSat's assertion that either the Commission's rule or the equivalent ITU standard requires that a V-band NGSO system coordinate with GSO systems<sup>12</sup> is incorrect. The requirement is simply not to interfere.

- The Commission has eliminated former Section 25.156(d)(5) of its rules;<sup>13</sup> therefore Hughes' proposal to attach conditions to requested waivers of this rule<sup>14</sup> is moot.

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<sup>7</sup> See *Hughes Comments* at 2-3.

<sup>8</sup> See *NGSO Report and Order* at ¶ 72.

<sup>9</sup> See *SES/O3b Comments* at 4-5.

<sup>10</sup> See *NGSO Report and Order*, Appendix A, Section 25.289.

<sup>11</sup> See *ViaSat Comments* at 7.

<sup>12</sup> *Id.*

<sup>13</sup> See *NGSO Report and Order* at ¶ 39

<sup>14</sup> See *Hughes Comments* at 3. We note that, while generally referencing this section number, in its request for conditions, Hughes refers to "Section 25.165(d)(5)," but we presume that this is just a typographical error.

## **B. The Commission Has Already Rejected SpaceX's Request to Limit the Uplink Power of NGSO Earth Stations**

In its Comments, SpaceX complained about the uplink power of the earth stations of Telesat and that of several other proposed V-band NGSO constellations.<sup>15</sup> Specifically with respect to Telesat's Petition, SpaceX requested that a grant be conditioned on Telesat's compliance with the uplink power limitations SpaceX had proposed in the NGSO rulemaking proceeding.<sup>16</sup> The Commission has now released its Report and Order in that proceeding and denied SpaceX's request.<sup>17</sup> That decision governs here and, accordingly, SpaceX's request for conditions to be imposed upon the uplink power of Telesat's earth stations here too should be rejected.<sup>18</sup>

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<sup>15</sup> See *SpaceX Telesat Comments* at 2-5; See also *SpaceX Comments on O3b Application* at 5-6, *SpaceX's July Comments* at 12.

<sup>16</sup> See *SpaceX Telesat Comments* at 5.

<sup>17</sup> See NGSO Report and Order at ¶ 55. Telesat notes that decision also addressed other spectrum sharing issues with a revised Section 25.261 of the Commission's rules that applies to all NGSO FSS operations, including in the V-band. Accordingly, subject to any reconsideration or reexamination of those rules, including as suggested in the *Report and Order* itself, see NGSO *Report and Order* ¶ 49, the adoption of those rules moots the comments of SES/O3b on the sharing issue. See SES/O3b Comments at 5-6. In any event, any further reconsideration or review of V-band issues should be addressed in a proceeding of general applicability and not as part of the consideration of Telesat's Petition.

<sup>18</sup> Given this decision, Telesat sees no need to belabor the record on the subject with an extended discussion. Telesat does, however, hereby incorporate by reference the showings that it has made in response to similar arguments made by SpaceX both in the NGSO NPRM proceeding and with respect to Telesat's Ka-band NGSO constellation application. See *Telesat NGSO NPRM Comments*; see also *In re Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, IB Docket No. 16-408, Reply Comments of Telesat Canada at 15-17 (filed Apr. 10, 2017); Letter from Henry Goldberg, Attorney for Telesat Canada, to Jose Albuquerque, FCC, *re ex parte response to SpaceX IB Docket No. 16-408* (Sep. 19, 2017); *Telesat Canada's Response to Comments of Space Exploration Technologies Corp.*, In re Telesat Canada's Petition for Declaratory Ruling to Grant Access to the U.S. Market for Telesat's NGSO Constellation, IBFS File No. SAT-PDR-20161115-00108 (filed July 7, 2017). Telesat demonstrated therein

## II. CONCLUSION

Telesat urges the Commission to grant Telesat's Petition. Nothing in the Comments with respect to that Petition warrants delaying such favorable action. For the reasons stated herein, a grant should be conditioned on the outcome of any proceeding to develop NGSO-GSO sharing criteria for V-band, and bond and milestone requirements should be deferred until such criteria have been developed and implemented.

Respectfully submitted,

TELESAT CANADA

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that, far from promoting spectral efficiency, SpaceX's proposal to limit the uplink power of other systems is merely one designed to favor its own choices for system architecture over those of other systems.

## CERTIFICATE OF SERVICE

I hereby certify that on this 11<sup>th</sup> day of October, 2017, a copy of the foregoing Response to Comments of Hughes Network Systems, LLC was sent by first-class, United States mail to the following:

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