



May 16, 2019

*By Electronic Filing*

Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, DC 20554

Re: *Hughes Network Systems, LLC, File No. SAT-MOD-20190212-00011; ViaSat, Inc. Petition for Declaratory Ruling Granting Access to the U.S. Market for the ViaSat System, IBFS File No. SAT-PDR-20161115-00120*

Dear Ms. Dortch:

Pursuant to 47 C.F.R. § 1.1206, Hughes Network Systems, LLC (together with its affiliates, “Hughes”) submits this *ex parte* letter summarizing its *ex parte* meeting on May 14, 2019 regarding the above-captioned proceedings. Present at the meeting on behalf of Hughes were Jennifer A. Manner, Senior Vice President, Regulatory Affairs and Kim Baum, Vice President, Regulatory Affairs. Also present were the following International Bureau, Satellite Division staff: Jose Albuquerque, Kerry Murray, Stephen Duall, Alan Thompson, and Jennifer Balatan. At the meeting, Hughes discussed: 1) Viasat’s request for non-conforming inter-satellite service use of the Ka-band Fixed-Satellite Service spectrum consistent with the points set forth in the attached talking points, and 2) O3b Limited’s (“O3b”) comments<sup>1</sup> regarding Hughes’s request to modify its Jupiter 3 authorization to add spectrum in the 18.8-19.3 GHz (space-to-Earth) band for FSS downlinks to user terminals in the United States and operate in the 28.6-29.1 GHz (Earth-to-space) band for FSS feeder uplinks.<sup>2</sup> Hughes underscored the arguments it made in the attached letter responding to O3b’s comments.<sup>3</sup>

---

<sup>1</sup> Comments of O3b Limited, File No. SAT-MOD-20190212-00011 (Apr. 15, 2019).

<sup>2</sup> Hughes Network Systems, LLC, File No. SAT-MOD-20190212-00011 (filed Feb. 12, 2019).

<sup>3</sup> Letter from Jennifer Manner, Senior Vice President, Regulatory Affairs, Hughes Network Systems, LLC, File No. SAT-MOD-20190212-00011 (filed May 3, 2019).

Please direct any questions regarding this matter to the undersigned.

Respectfully submitted,

/s/ Jennifer A. Manner

Jennifer A. Manner

Senior Vice President, Regulatory Affairs

Attachment

cc: Jose Albuquerque  
Kerry Murray  
Stephen Duall

Jennifer Balatan  
Alan Thompson



## VIASAT'S REQUEST FOR NON-CONFORMING INTER-SATELLITE SERVICE USE OF KA-BAND FIXED-SATELLITE SERVICE SPECTRUM SHOULD BE DISMISSED

*ViaSat Petition for U.S. Market Access (IBFS File No. SAT-PDR-20161115-00120); Streamlined Licensing Procedures for Small Satellites (IB Dkt. No. 18-86)*

- Hughes Network Systems, LLC (“Hughes”) is the largest provider of satellite broadband services in the United States and globally. Hughes operates three satellites in the Ka band, including spectrum that ViaSat seeks access for inter-satellite links (“ISLs”) (*i.e.*, 17.8-19.3 GHz and 19.7-20.2 GHz for inter-satellite “downlinks” from geostationary (“GSO”) to non-geostationary (“NGSO”) satellites, and 27.5-29.1 GHz and 29.5-30.0 GHz for inter-satellite “uplinks” from NGSO to GSO satellites).<sup>4</sup>

### **The Commission Should Dismiss ViaSat’s Request for Ka-band ISLs Since No International Frequency Allocation for ISL Use of the Spectrum Exists.**

- Section 25.112(a)(3) of the FCC’s rules requires dismissal of a request for “authority to operate a space station in a frequency band that is not allocated internationally for such operations under the Radio Regulations of the International Telecommunication Union.” In adopting this rule, the FCC stated that it “will dismiss applications for NGSO-like satellite systems without prejudice as premature [in cases where there is no international frequency allocation].”<sup>5</sup> The FCC further noted that “[o]nce there is an international frequency allocation ... [but] before a domestic allocation is adopted,” an applicant may request a waiver of the *domestic* allocations to permit a non-conforming use of spectrum.<sup>6</sup>
- Neither the International Table nor U.S. Table of Frequency Allocations provides any allocation for ViaSat’s proposed ISL use of Ka-band spectrum. *See* 47 C.F.R. § 2.106.
- The FCC has found that “ISLs are communication links between in-orbit satellites .... [and] operate in spectrum *allocated to the inter-satellite service* [“ISS”].”<sup>7</sup> The FCC has

---

<sup>4</sup> ViaSat is seeking market access for a Ka- and V-band NGSO constellation, utilizing portions of the Ka-band (*i.e.*, 17.8-19.3 GHz, 19.7-20.2 GHz, 27.5-29.1 GHz, and 29.5-30.0 GHz) “to support high-speed transmissions between its MEO [NGSO] constellation and its in-orbit GSO satellites.” *See* ViaSat, Petition for Declaratory Ruling, IBFS File No. SAT-PDR-20161115-00120, at 5 (filed Nov. 15, 2016).

<sup>5</sup> *See Amendment of the Commission’s Space Station Licensing Rules and Policies*, 18 FCC Rcd 10760, ¶ 49 (2003).

<sup>6</sup> *See id.* ¶ 50.

<sup>7</sup> *See Teledesic*, Order and Authorization, 16 FCC Rcd 2501, ¶ 1 n.3 (IB 2001) (emphasis added) (citing International Telecommunication Union (“ITU”) Radio Regulation § 1.22).

deferred licensing of ISLs when the spectrum is not internationally allocated or otherwise available for ISS use.<sup>8</sup>

- ViaSat argues that Section 2.1 of the FCC’s rules broadly defines “Fixed-Satellite Service” to “include[] satellite-to-satellite links, which may also be operated in the inter-satellite service,” but fails to cite to any FCC precedent finding that ISLs qualify as FSS and may be authorized consistent with an international FSS allocation. Moreover, as the FCC itself has noted in the *Small Satellites* proceeding, “an allocation for FSS may be limited by parenthetical to the space-to-Earth direction. In that instance, inter-satellite communications would *not* be in accordance with the Table of Allocations.”<sup>9</sup>
- ViaSat further argues that inter-satellite transmissions are consistent with an FSS allocation if they merely “point” in the direction suggested by the relevant parenthetical (*e.g.*, space-to-Earth),<sup>10</sup> but this novel interpretation is contrary to the FCC’s own finding that inter-satellite transmissions would be in accordance with an FSS allocation only “[w]here a parenthetical to the FSS allocation specified ‘space-to-space’ communications.”<sup>11</sup>
- Accordingly, in the absence of an international allocation for ISS use of the requested Ka-band spectrum, the FCC lacks authority to waive its allocation rules to permit non-conforming ISS use, and consequently should dismiss ViaSat’s request for Ka-band ISLs. The FCC also should reject ViaSat’s request for rules in the *Small Satellites* proceeding to permit ISS use of spectrum not allocated for such use.

**At a Minimum the FCC Should Defer Authorizing Use of Ka-Band FSS Spectrum for ISLs Until Technical Studies Are Completed to Ensure Interference Protection to GSO Operations.**

- Use of Ka-band FSS spectrum for ISLs has not been subject to completed technical studies to ensure interference protection to GSO operations. Although ViaSat has submitted a technical analysis purportedly showing no harmful interference, the analysis has not been fully vetted or supported domestically or internationally.
- Specific allocations of frequency bands for use as ISS links are traditionally made by competent World Radiocommunication Conferences (“WRC”) based on study contributions and analysis that guarantee the safe use of those frequency bands for such service. If necessary, an agenda item could be proposed at WRC-19 for consideration at WRC-23.

---

<sup>8</sup> See, *e.g.*, *Teledesic*, Order and Authorization, 12 FCC Rcd 3154, ¶ 21 (IB 1997).

<sup>9</sup> See *Streamlining Licensing Procedures for Small Satellites*, Notice of Proposed Rulemaking, FCC 18-44, ¶ 70 (2018) (“*Small Satellites NPRM*”) (emphasis added).

<sup>10</sup> See Reply Comments of ViaSat, IB Dkt. No. 18-86, at 3 (Aug. 7, 2018) (“ViaSat Reply Comments”).

<sup>11</sup> See *Small Satellites NPRM*, ¶ 70.

- ViaSat argues that technical studies are not required to be completed at the ITU because its proposed inter-satellite links are “entirely consistent” with the existing FSS definition and existing FSS allocations,<sup>12</sup> but as discussed above, such inter-satellite links in fact are not consistent with the existing FSS definition or FSS allocations and need study to see the impact on the sharing and interference environments.
- In any event, ViaSat has recognized the importance of protecting GSO operations from harmful interference caused by NGSO systems and has supported conditioning grants of market access on the adoption of suitable aggregate interference limits.<sup>13</sup> As with the concerns over aggregate EPFD limits, the impact of multiple, large-scale NGSO constellations using ISS links to interconnect orbital arcs in FSS Ka-band spectrum has not been sufficiently quantified in order to fashion adequate protections for existing GSO networks. Unlike the concern over aggregate EPFD limits, there are no baseline interference standards from which operators can comport their NGSO-to-GSO FSS Ka-band ISS transmissions. Moreover, no studies have been conducted to determine whether use of FSS Ka-band spectrum for ISS links will contribute to aggregate EPFD limits, further exacerbating the issue for which ViaSat has itself demanded action.
- Without further analysis being performed and appropriate rules being adopted domestically and internationally, there is a risk that ViaSat’s proposal could result in harmful interference to other satellite systems (both GSO and NGSO) in the Ka band. It is imperative then that further action on ViaSat’s NGSO-to-GSO proposal be deferred until standards for antenna pointing accuracy, performance standards and interference avoidance can be addressed internationally and domestically.
- Accordingly, consideration of ViaSat’s request for ISL use of Ka-band spectrum should be dismissed or at least deferred until completion of appropriate technical studies and adoption of technical and operational rules to ensure interference protection to GSO operations at a competent WRC and then domestically.
- The United States should consider advancing a future agenda item for WRC 2023 focused on the use of the Ka-band for use for inter-satellite service links which includes the study of these bands and their impact on incumbent services. Such an Agenda item will enable the development of studies to ensure that the most efficient use of the spectrum and protection of incumbent services from harmful interference.

---

<sup>12</sup> See ViaSat Reply Comments at 4.

<sup>13</sup> Reply Comments of ViaSat, IBFS File No. SAT-PDR-20161115-00120 (July 14, 2017).



May 3, 2019

*By Electronic Filing*

Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, DC 20554

Re: Hughes Network Systems, LLC, File No. SAT-MOD-20190212-00011, Call Sign S3017

Dear Ms. Dortch:

Pursuant to 47 C.F.R. § 1.1206, Hughes Network Systems, LLC (together with its affiliates, “Hughes”) submits this letter regarding Hughes’s pending application to modify its authorization to deploy and operate EchoStar XXIV (also known as “HNS 95W” or “Jupiter 3”) Fixed Satellite Service (“FSS”) in the above-captioned application.<sup>14</sup> On April 15, 2019, O3b Limited (“O3b”) filed comments regarding Hughes’s request to modify its Jupiter 3 authorization to add spectrum in the 18.8-19.3 GHz (space-to-Earth) band for FSS downlinks to user terminals in the United States and operate in the 28.6-29.1 GHz (Earth-to-space) band for FSS feeder uplinks.<sup>15</sup>

Hughes does not object to the placement of a condition on a grant of its Modification that requires it to operate on an unprotected, non-interference basis in the 18.8-19.3 GHz and 28.6-29.1 GHz frequency bands. In fact, Hughes is currently coordinating with O3b and other NGSO satellite system operators for its Jupiter 3 satellite network and intends to complete coordination with additional NGSO FSS operators licensed in these bands.<sup>16</sup> However, Hughes opposes O3b’s proposed condition that O3b requests that the Commission impose a condition on its grant of the Jupiter 3 Modification to require Hughes to “no later than sixty days before the scheduled initial launch ... either complete coordination with non-geostationary orbit systems or make a

---

<sup>14</sup> Hughes Network Systems, LLC, File No. SAT-MOD-20190212-00011 (“Modification”).

<sup>15</sup> Comments of O3b Limited, File No. SAT-MOD-20190212-00011 (Apr. 15, 2019) (“O3b Comments”).

<sup>16</sup> Modification, Exhibit 1 at 2-3 (“Legal Narrative”) and Attachment A at 5 (“Technical Annex”). In its initial application for Jupiter 3, Hughes stated that it had completed coordination with O3b and OneWeb and stated “[b]ased on the same principles used to achieve technical compatibility with O3b and OneWeb, Hughes will work with all future licensed NGSO FSS operators that are licensed to use the 18.8-19.3 GHz and 28.6-29.1 GHz frequency bands to reach corresponding coordination agreements.” Letter from Jennifer A. Manner, Senior Vice President, Regulatory Affairs, Hughes Network Systems, LLC, to Jose P. Albuquerque, Chief, Satellite Division, Federal Communications Commission, File No. SAT-LOA-20170621-00092, at 3-4 (Sept. 8, 2017).

detailed technical showing of its ability to protect NGSO systems prior to the start of operation.”<sup>17</sup>

First, the proposed condition is too far reaching and would pose an unfair administrative burden on Hughes. Hughes stated in its Modification that it will accept interference from, and not cause harmful interference to, primary NGSO FSS operators in the band.<sup>18</sup> This is consistent with the requirements imposed by the Commission on satellite systems operating on a secondary basis.<sup>19</sup> In the event that Jupiter 3’s operations do cause harmful interference to a primary NGSO operator in these bands, Hughes is obligated to cease operations. However, imposing a condition that requires Hughes to cease operations if it does not successfully coordinate with *every* NGSO FSS operator in this band is an overbroad requirement. What’s more, this requirement exceeds the FCC’s stated policy that when disputes arise as to whether the “level of interference caused by GSO FSS transmissions rises to ‘harmful interference,’ and therefore violates their secondary status, this question may be taken to the Commission.”<sup>20</sup> The FCC’s stated approach allows GSO systems to operate in a manner that will not cause harmful interference to NGSO systems, even in the absence of completed coordination agreements and provides NGSO operators with a remedy.

Second, tying the condition to the scheduled launch date for an NGSO FSS satellite system is not a sufficiently concrete requirement. Launch dates are unpredictable and subject to change, with launch dates often facing significant delays. The proposed condition would place the burden on Hughes to track the launch of every FCC-licensed NGSO satellite system. Requiring Hughes to link its coordination agreements with a potentially moving launch date of an NGSO FSS system would impose an unnecessary burden.

As stated above, Hughes does not object to its secondary status in the 18.8-19.3 GHz and 28.6-29.1 GHz bands. What’s more, Hughes has taken the initiative to coordinate with the NGSO operators holding primary status, including O3b. Hughes requests that the Commission decline to impose O3b’s requested condition on Jupiter 3’s proceed with grant of the Modification as soon as possible.

---

<sup>17</sup> O3b Comments at 1, 2.

<sup>18</sup> Modification, Legal Narrative at 2; Technical Annex at 2.

<sup>19</sup> See 47 C.F.R. § 2.106 n.NG165; see also *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, 32 FCC Rcd 7809, ¶ 14 (2017) (“*NGSO Report and Order*”).

<sup>20</sup> *NGSO Report and Order* ¶ 16.

Please direct any questions regarding this matter to the undersigned.

Respectfully submitted,

*/s/ Jennifer A. Manner* \_\_\_\_\_  
Jennifer A. Manner  
Senior Vice President, Regulatory Affairs  
Hughes Network Systems, LLC



## CERTIFICATE OF SERVICE

I, Theresa Rollins, hereby certify under penalty of perjury that the foregoing *ex parte* letter was served on May 16, 2019, by depositing a true copy thereof with the United States Postal Service, first class postage pre-paid, addressed to the following:

Suzanne Malloy  
Vice President, Regulatory Affairs  
O3b Limited  
1129 20<sup>th</sup> Street N.W., Suite 1000  
Washington, D.C. 20036

Karis A. Hastings  
SatCom Law LLC *for* SES-17 S.à r.l.  
1317 F Street, N.W., Suite 400  
Washington, D.C. 20004

John P. Janka  
Latham & Watkins  
555 11<sup>th</sup> Street, NW, Suite 1000  
Washington, D.C. 20004-1304

/s/ Theresa Rollins

Theresa Rollins