

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, DC 20554

In the Matter of	)	
	)	
<b>Hughes Network Systems, LLC</b>	)	
	)	
Application for Authority to Launch	)	File Nos. SAT-LOA-20170621-00092 &
and Operate a Ka-band and Q/V-band	)	SAT-AMD-20170908-00128
Geostationary Fixed-Satellite Service	)	
Satellite at the Nominal 95° W.L.	)	Call Sign S3017
Orbital Location	)	

To: Chief, Satellite Division

**COMMENTS OF  
THE BOEING COMPANY**

The Boeing Company (“Boeing”), by its attorneys, hereby provides brief comment on the application of Hughes Network Systems, LLC (“Hughes”) for authority to launch and operate a geostationary orbit (“GSO”) satellite operating in the fixed-satellite service (“FSS”) in the Ka- and Q/V-bands. Boeing acknowledges Hughes’ initiative in proposing what would be one of the first GSO FSS satellites to operate on a commercial basis in the Q/V-bands. As Boeing has repeatedly indicated in the context of Boeing’s own satellite system applications<sup>1</sup> and in the Commission’s *Spectrum Frontiers* proceeding, the frequency bands between 37.5 and 52.4 GHz (“Q/V-band”)<sup>2</sup>

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<sup>1</sup> See The Boeing Company, Application for Authority to Launch and Operate a Non-Geostationary Low Earth Orbit Satellite System in the Fixed-Satellite Service (call sign S2966), SAT-LOA-20160622-00058 & SAT-AMD-20170301-00030 (filed June 22, 2016); The Boeing Company, Application for Authority to Launch and Operate a Non-Geostationary Satellite Orbit System in the Fixed-Satellite Service (call sign S2993), IBFS File No. SAT-LOA-20170301-00028 (filed March 1, 2017).

<sup>2</sup> Boeing has routinely referred to this frequency range as the V-band, while Hughes references this frequency range as the Q/V-band in its pending application. To avoid confusion, Boeing will employ Hughes’ approach of referencing this frequency range as the Q/V-band in these comments.

constitute a critical growth opportunity for the commercial satellite industry. Access to significant portions of this spectrum will be necessary in order for broadband satellite systems to help bridge the still-growing digital divide by providing broadband communications services to consumers on a nationwide and global basis at data rates that are competitive with terrestrial broadband offerings.

Hughes filed its application on June 21, 2017, which, as Hughes acknowledges, was after the March 1, 2017 cut off deadline for the filing of applications seeking to launch and operate non-geostationary satellite orbit (“NGSO”) FSS systems operating in the Q/V-band.<sup>3</sup> The NGSO FSS cut off deadline was initiated by the Commission in response to Boeing’s filing on June 22, 2016 of its initial application for authority to launch and operate an NGSO FSS system operating in the Q/V-band.

Throughout this period, it was the stated policy of the Commission that, in spectrum bands such as the Q/V-band where no satellite service rules have been adopted,<sup>4</sup> once an application for an “NGSO-like satellite system” has been filed, “we will conduct a processing round pursuant to the modified processing round procedure, and we will dismiss subsequently-filed GSO-like satellite system applications in that band until sharing criteria are established.”<sup>5</sup>

In raising this point, Boeing is not requesting that the Commission dismiss Hughes’ GSO FSS application. As Boeing has acknowledged in its own applications and in the context of the

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<sup>3</sup> See *Hughes Application* at 14-15.

<sup>4</sup> See *id.* at 8 (acknowledging the Commission has not adopted Q/V-band-specific service rules).

<sup>5</sup> See Amendment of the Commission’s Space Station Licensing Rules and Policies, *First Report and Order and Further Notice of Proposed Rulemaking*, 18 FCC Rcd 10760, 10786-87, ¶ 58 (2003).

Commission's *NGSO Sharing* proceeding,<sup>6</sup> "[i]t is now clear that GSO and NGSO systems can share spectrum on a co-frequency basis using various techniques."<sup>7</sup> Therefore, a blanket prohibition on the simultaneous consideration by the Commission of both NGSO and GSO FSS applications is no longer necessary.

Boeing remains very concerned, however, that the Commission's active consideration of one or more GSO FSS applications involving the Q/V-band may lead to suggestions that the licensing of NGSO FSS systems in the Q/V-band should be delayed until detailed sharing criteria has been adopted by the Commission and by the International Telecommunication Union ("ITU").

Boeing's concern is not just theoretical. SES S.A. and its subsidiary O3b Limited have repeatedly filed comments and reply comments in response to many of the pending Q/V-band NGSO system applications urging the Commission to defer action on all such applications until a "comprehensive NGSO-GSO sharing framework" has been adopted by the ITU and Commission to protect GSO FSS networks that will also operate in the Q/V-band in the future.<sup>8</sup> ViaSat, Inc. also filed comments in the Commission's *NGSO Sharing* proceeding asserting "it is essential that the Commission develop and adopt EPFD limits for *both* the Ka-band *and* the V-band that

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<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, *Notice of Proposed Rulemaking*, FCC 16-170 (Dec. 15, 2016).

<sup>7</sup> Comments of The Boeing Company, IB Docket No 16-408, at 11 (Feb. 27, 2017).

<sup>8</sup> Reply Comments of SES S.A. and O3b Limited, File Nos. SAT-LOA-20170301-00027 and SAT-PDR-20170301-00023, at 4 (Oct. 23, 2017); *see also* Comments of SES S.A. and O3b Limited, File Nos. SAT-LOA-20170301-00027 and SAT-PDR-20170301-00023 (Sept. 25, 2017); Reply Comments of SES S.A. and O3b Limited, File Nos. SAT-LOI-20170301-00031 *et al.*, at 1 (Aug. 11, 2017).

adequately protect current GSO network technology from NGSO interference . . . before any NGSO systems in the pending Ka-band and V-band processing rounds are authorized.”<sup>9</sup>

This implicit presumption that GSO FSS systems should be treated as incumbents in the Q/V-band is unhelpful in the development of spectrum sharing rules that will permit NGSO and GSO FSS systems to operate in an equitable and spectrally efficient basis in the Q/V-band. In making this point, Boeing recognizes that NGSO FSS systems will need to employ GSO arc avoidance and other measures to facilitate co-frequency GSO FSS operations in the Q/V-band.<sup>10</sup> As the Commission recently acknowledged, however, “the extent of the protection of GSO networks can be more or less restrictive” depending on the outcome of the ITU-R study process.<sup>11</sup>

To this end, Boeing has been encouraged by the progress of ITU Working Party 4A in furtherance of WRC-19 agenda item 1.6. The consensus within Working Party 4A appears to be that the restrictions on NGSO FSS systems that were adopted to protect incumbent GSO systems in the Ku- and Ka-bands can be improved upon to facilitate more efficient use of Q/V-band spectrum by both GSO and NGSO FSS satellite systems.<sup>12</sup>

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<sup>9</sup> Reply Comments of ViaSat, Inc., IB Docket No 16-408, at 8 (April 10, 2017) (*emphasis in original*).

<sup>10</sup> See *NGSO Sharing Order*, ¶ 39 (observing that “[i]f NGSO systems are not required to protect GSO networks, GSO networks may be precluded entirely, because as a general matter they have less flexibility to avoid causing harmful interference to NGSO systems or protecting themselves while operating in the same band”).

<sup>11</sup> *Id.*

<sup>12</sup> See Annex 14 to Chairman’s Report, ITU-R Working Party 4A, Document 4A/519, *Working Document Towards a Preliminary Draft New Report ITU-R S.[50/40 GSO-NGSO Sharing], Sharing Between 50/40 GHz GSO FSS Networks and Non-GSO FSS Systems*, WRC-19 agenda item 1.6 (6 Nov. 2017), available at [https://www.itu.int/dms\\_ties/itu-r/md/15/wp4a/c/R15-WP4A-C-0519!N14!MSW-E.docx](https://www.itu.int/dms_ties/itu-r/md/15/wp4a/c/R15-WP4A-C-0519!N14!MSW-E.docx) (Ties password required).

Boeing is actively contributing to the deliberations of Working Party 4A, which is establishing the basis for WRC-19 action. During the interim, the Commission should avoid any action that may be viewed either domestically or within the ITU-R process as favoring GSO FSS networks over NGSO FSS systems in the Q/V-band. Instead, although the Commission should continue to actively process currently pending GSO and NGSO FSS applications, the grant of licenses to either type of system should expressly acknowledge the ITU-R deliberations and the need for all satellite systems in the Q/V-band to operate in compliance with the outcome of WRC-19 agenda item 1.6 and any corresponding domestic regulations that are subsequently adopted by the Commission.

Respectfully submitted,

**THE BOEING COMPANY**

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November 13, 2017

## CERTIFICATE OF SERVICE

I, Bruce A. Olcott, hereby certify that on November 13, 2017, I caused a copy of the foregoing Comments of The Boeing Company to be served by electronic mail and by U.S. first-class mail, postage paid, to the following:

Jennifer A. Manner  
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A handwritten signature in black ink, appearing to read 'Bruce A. Olcott', written over a horizontal line.

Bruce A. Olcott