

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
ViaSat Inc. Application for Authority to)	IBFS File No. SES-LIC-20170401-00357
Deploy Fixed Earth Stations)	Call Sign E170088

PETITION TO DEFER OF O3B LIMITED

O3b Limited (“O3b”) submits this petition to defer action on the above-referenced application in which ViaSat, Inc. (“ViaSat”) seeks authority to deploy four million 0.75 meter and 10,000 1.8 meter fixed earth stations that will communicate with satellites in the geostationary orbit (“GSO”) in the Ka-band, including in the 28.6-29.1 GHz and 18.8-19.3 GHz bands.¹ Viasat acknowledges that non-geostationary orbit (“NGSO”) systems have primary status in 28.6-29.1 GHz and 18.8-19.3 GHz (together, the “NGSO Primary Bands”) and that ViaSat’s proposed communications with GSO satellites will be secondary in the 28.6-29.1 GHz band and non-conforming in the 18.8-19.3 GHz band.² Contrary to ViaSat’s suggestion, however, the record developed in other proceedings is insufficient to establish that ViaSat’s proposed operations will adequately protect future NGSO constellations from harmful interference or that ViaSat’s proposed terminals will be able to operate successfully notwithstanding interference from primary NGSO networks. Accordingly, before it can act on the ViaSat Application, the Commission must require ViaSat to provide additional evidence of its ability to operate on an unprotected, non-interference basis in the NGSO Primary Bands.

¹ ViaSat, Inc., Call Sign E170088, File No. SES-LIC-20170401-00357 (the “ViaSat Application”).

² *See id.*, Exhibit A at 2.

The ViaSat Application provides no technical analysis regarding the compatibility of the proposed operations with existing and future NGSO systems in the NGSO Primary Bands. Instead, ViaSat observes that its ViaSat-1 spacecraft “has been operating for over six years successfully at 28.6-29.1 GHz on a secondary basis with respect to NGSO FSS operations, and at 18.8-19.3 GHz on a non-conforming basis, pursuant to a waiver” of U.S. frequency allocation rules.³ ViaSat goes on to allege that the “existing conditions in the ViaSat-1 and ViaSat-2 [satellite] authorizations . . . are adequate to manage the risk of interference from the proposed earth stations with respect to NGSO systems.”⁴

Critically, however, the ViaSat-1 and ViaSat-2 space station applications relied on assumptions regarding NGSO systems that are now outdated and inadequate. For example, in support of the letter of intent seeking U.S. market access for the ViaSat-2 satellite, ViaSat performed a compatibility analysis with respect to two types of NGSO systems. ViaSat analyzed O3b’s current equatorial orbit configuration, but limited its consideration to the only O3b facility that had been authorized by the Commission at that time – a single gateway earth station in Hawaii.⁵ ViaSat also addressed its ability to co-exist with systems in a highly elliptical orbit (“HEO”), using characteristics of HEO network proposals filed in 2004 that received Commission authority but were never built.⁶ ViaSat recognized that its showing of compatibility

³ *Id.*

⁴ *Id.*, Exhibit A at 2 & n.5, *citing* ViaSat-1 Authorization, File No. SAT-LOI-20080107-00006, Attachment – Conditions for Letter of Intent at ¶ 4 (granted Aug. 18, 2009); ViaSat-2 Authorization, File No. SAT-LOI-20140204-00013, Conditions at ¶ 4 (granted Dec. 12, 2013). O3b notes that the file number ViaSat specifies for the ViaSat-2 Authorization is in fact associated with another ViaSat satellite authorization, ViaSat-KA 89W. The correct reference for ViaSat -2 is File No. SAT-LOI-20130319-00040.

⁵ ViaSat, Inc., Call Sign S2902, File No. SAT-LOI-20130319-00040, Technical Appendix at 11-13.

⁶ *Id.* at 14-16.

with HEO networks was dependent on the fact that they “do not communicate with earth stations when their satellites cross the equatorial plane, thus in-line events with a GSO network do not occur.”⁷

ViaSat acknowledged that in order to prevent interference to other types of NGSO constellations that do communicate with earth stations when the satellites pass through the equatorial plane, it would need to “cease transmissions from the VIASAT-2 satellite and its associated earth stations such that the required amount of angular separation with the NGSO network is always maintained.”⁸ But ViaSat did not specify what amount of angular separation is “required” for this purpose, did not explain how it would determine when to cease transmissions, and did not disclose the mechanism by which the earth stations’ transmissions would be terminated to ensure that NGSO systems are protected.

More importantly, the NGSO landscape has changed dramatically in the past several years, rendering the analysis performed for ViaSat-2 obsolete. In particular, more than four months before the instant ViaSat Application was filed, O3b and numerous others, including ViaSat itself, responded to the Commission’s announcement of an NGSO processing round by submitting requests for new NGSO systems in Ka-band frequencies.⁹

The ViaSat Application, however, completely ignores these developments. As noted above, ViaSat’s original analysis with respect to O3b was limited to one gateway earth station operating with O3b’s equatorial orbit satellites and does not adequately reflect compatibility of

⁷ *Id.* at 16.

⁸ *Id.*

⁹ See *OneWeb Petition Accepted for Filing; IBFS File No. SAT-LOI-20160428-00041; Cut-Off Established for Additional NGSO-Like Satellite Applications or Petitions for Operations in the 10.7-12.7 GHz, 14.0-14.5 GHz, 17.8-18.6 GHz, 18.8-19.3 GHz, 27.5-28.35 GHz, 28.35-29.1 GHz, and 29.5-30.0 GHz Bands*, Public Notice, DA 16-804 (July 15, 2016) (“Ka-Band NGSO Processing Round Notice”).

the proposed ViaSat operations with systems using non-equatorial orbits. The ViaSat Application does not provide a showing that ViaSat's proposed GSO operations in the NGSO Primary Bands could share spectrum on an unprotected, non-interference basis with any of the systems submitted in response to the Ka-Band NGSO Processing Round Notice, including ViaSat's own planned NGSO system.

Commission precedent requires additional evidence that ViaSat's proposal for secondary and non-conforming use of the NGSO Primary Bands is feasible. Waivers of the Table of Allocations are generally granted "when there is little potential for interference into any service authorized under the Table of Frequency Allocations and when the non-conforming operator accepts any interference from authorized services."¹⁰ Yet ViaSat has not provided any basis for the Commission to determine how big a risk of interference ViaSat's planned operations pose to future NGSO systems. Simply asserting that ViaSat can manage the interference risks is not enough. Instead, during an in-line event where the greatest likelihood for interference exists between an NGSO satellite and one of up to 4,010,000 transmitting ViaSat terminals, ViaSat must explain how it will ensure that each antenna is able to determine that an in-line event is occurring and carry out the requirement to cease transmissions in the NGSO Primary Bands until the in-line event has concluded.

Such a showing is essential because the NGSO Primary Bands are the only Ka-band FSS frequencies in which NGSO systems have primary status over GSO systems in the United States. NGSO systems need anchor bands in which spectrum access cannot be hindered by other services.¹¹ In designing its system, O3b relied on having access to these frequencies on a

¹⁰ See *The Boeing Company*, 16 FCC Rcd 22645, 22651 & n.48 (IB & OET 2001) (citing cases).

¹¹ In submissions responding to the Commission's pending rulemaking on NGSO systems, O3b and other commenters emphasized the critical importance of protecting NGSO access to the

primary basis, with effective protection from harmful interference due to GSO operations. Response to the Ka-Band NGSO Processing Round Notice indicates the strong interest in establishing new NGSO systems. It is crucial that the Commission require that prospective GSO users demonstrate and ensure that their operations in the NGSO Primary Bands will adequately protect both existing and future NGSO operators from harmful interference.

In short, the ViaSat Application fails to provide a persuasive demonstration that its proposed non-conforming use of the 18.8-19.3 GHz band and secondary use of the 28.6-29.1 GHz band will be compatible with current and future NGSO use of these frequencies. The Commission should not further consider the ViaSat Application until these deficiencies are corrected.

Respectfully submitted,

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NGSO Primary Bands. *See, e.g.*, Reply Comments of SES S.A. and O3b Limited, IB Docket No. 16-408, filed Apr. 10, 2017 at 7-9 & nn. 26, 32, & 33.

CERTIFICATE OF SERVICE

I hereby certify that on this 2nd day of June, 2017, I caused a true and correct copy of the foregoing “Petition to Defer of O3b Limited” to be sent by first class mail, postage prepaid, to the following:

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/s/ Suzanne Malloy
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