

September 9, 2019

***VIA ELECTRONIC FILING***

Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12th Street, S.W.  
Washington, D.C. 20554

Re: O3b Limited Petition to Defer – ViaSat Aeronautical ESIMs application  
IBFS File No. SES-LIC-20190411-00503  
Call Sign: E190201

Dear Ms. Dortch:

In response to a Public Notice for the above referenced application from ViaSat, Inc. (“ViaSat”) to authorize aeronautical ESIMs terminals, O3b Limited (“O3b”) prepared and filed timely comments on August 23rd. When filing, O3b inadvertently submitted these comments under the wrong file number. However, O3b also mailed a hard copy of its comments to ViaSat on August 23rd.

Having realized its error, O3b is submitting its original comments to the correct IBFS filing number as an attachment to this letter.

Respectfully submitted,

      /s/ Will Lewis  
Senior Legal Counsel  
O3b Limited  
900 17<sup>th</sup> Street NW, Suite 300  
Washington, DC 20006

Attachment

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

In the Matter of	)	
	)	
ViaSat Inc. Application for Authority to	)	IBFS File No. SES-LIC-20190411-00503
Deploy Aeronautical Earth Stations in Motion	)	Call Sign E190201

**PETITION TO DEFER OF O3B LIMITED**

O3b Limited (“O3b”) submits these comments on the above-referenced application in which ViaSat, Inc. (“ViaSat”) seeks authority to deploy 1,000 0.3 meter aeronautical earth stations in motion (“ESIMs”) that will communicate with satellites in the Ka-band, including in the 28.6-29.1 GHz and 18.8-19.3 GHz bands.<sup>1</sup> 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 between earth stations in motion and geostationary orbit (“GSO”) satellites will be a non-conforming use in the 28.6-29.1 GHz band and the 18.8-19.3 GHz band.<sup>2</sup> Contrary to ViaSat’s suggestion, however, the showings in the Technical Description of this application are insufficient to establish that ViaSat’s proposed operations will adequately protect O3b’s current and future NGSO constellation 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

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<sup>1</sup> ViaSat, Inc., Call Sign E190201, File No. SES-LIC-20170401-00357 (the “ViaSat Application”).

<sup>2</sup> *See id.*, Exhibit A at 3.

the ViaSat Application, the Commission must require additional evidence of ViaSat's ability to operate on an unprotected, non-interference basis in the NGSO Primary Bands.

The ViaSat Application provides an insufficient technical analysis regarding the compatibility of the proposed operations with the existing and future O3b system in the NGSO Primary Bands. While ViaSat does provide an analysis that purports to demonstrate that it can protect the current and future O3b system, the technical showing fails to provide sufficient information for O3b to properly vet ViaSat's conclusions.<sup>3</sup>

Critically, ViaSat fails to provide essential inputs that inform its showing in Table-2 of the Technical Description, which claims to demonstrate the percentage of time during which a ViaSat ESAA may exceed an I/N greater than -12.2 towards each NGSO system.<sup>4</sup> By failing to provide, for example, the exclusion zones and avoidance angles that were factored into the calculation of Table-2, ViaSat has not provided NGSO stakeholders such as O3b with sufficient information to fully assess ViaSat's interference analysis.

A similar issue arises where ViaSat claims that it has based its analysis on "separation angle established either through coordination or calculated based on the system characteristics of each NGSO system operating, or expected to operate, in these bands."<sup>5</sup> The values used in these calculations are not provided by ViaSat, making it impossible to verify ViaSat's technical claims. Without these critical values, NGSO operators are unable to verify the assertions and

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<sup>3</sup> See Exhibit A at 4, Technical Description at 7, Table 2.

<sup>4</sup> *Id.*

<sup>5</sup> Exhibit A at 4.

conclusions made by ViaSat that its ESIMs will be able to protect NGSO systems in the NGSO Primary Bands.

Commission precedent requires additional evidence that ViaSat's proposal for non-conforming use of the NGSO Primary Bands is feasible. Waivers of the Table of Allocations for a nonconforming use are generally granted "when there is little potential for interference into any service authorized under the Table of Frequency Allocations and when the nonconforming operator accepts any interference from authorized services."<sup>6</sup> ViaSat's application does not provide sufficient information for the Commission or NGSO operators to assess the risk of harmful interference ViaSat's planned operations pose to current and future NGSO systems. In order to do so, ViaSat must detail exactly which inputs were used when it calculated the values provided in its application in order to fully demonstrate that its aeronautical ESIMs will protect O3b and other Ka-band NGSO constellations in the NGSO Primary Bands.

Such a showing is essential because the NGSO Primary Bands are the only FSS frequencies in which NGSO systems have priority over GSO systems in the United States. NGSO systems need anchor bands in which spectrum access cannot be hindered by other services. In designing its system, O3b relied on having access to these frequencies on a primary basis, with protection from harmful interference from 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 sufficiently demonstrate and ensure that their operations in the NGSO Primary Bands will adequately protect both existing and future NGSO operators from harmful interference.

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<sup>6</sup> See *The Boeing Company*, 16 FCC Rcd 22645, 22651 & n.48 (IB & OET 2001) (citing cases).

In the instant case, Commission insistence on a robust compatibility showing that is verifiable by NGSO stakeholders is particularly important given that ViaSat is proposing to deploy a significant number of ESIMs terminals that will operate in the NGSO Primary Bands. This deployment, if not properly vetted, could heighten interference risks and magnify the difficulty of addressing interference events if they arise.

In addition to demonstrating an effective means of preventing interference to NGSO networks, ViaSat and other prospective GSO users must show that their terminals can operate successfully in those instances in which access to the NGSO Primary Bands is not available. In particular, ViaSat should explain whether the spectrum outside the NGSO Primary Bands that will be available to its proposed terminals will be sufficient to sustain the planned operations if use of the NGSO bands must be terminated at any time to protect NGSO networks.<sup>7</sup>

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<sup>7</sup> See, e.g., Hughes Network Systems, LLC, Call Sign S2753, SAT-LOI-20091110-00119, Narrative at 10 (supporting request for access to the NGSO Primary Bands for the SPACEWAY 4 satellite by representing that there “will be sufficient additional spectrum on SPACEWAY 4 to allow Hughes to dynamically shift operations out of the NGSO spectrum for the duration of any in-line events”).

In short, the ViaSat Application fails to provide a thorough demonstration that its proposed non-conforming use of the 18.8-19.3 GHz band and 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,

**O3b LIMITED**

By: /s/ Will Lewis

Will Lewis

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August 23, 2019

## CERTIFICATE OF SERVICE

I hereby certify that on this 23rd day of August 2019, I caused to be served a true copy of the foregoing "Petition to Defer of O3b Limited" by first class mail, postage prepaid, upon the following:

Daryl Hunter  
Chief Technical Officer, Regulatory Affairs  
ViaSat, Inc.  
6155 El Camino Real  
Carlsbad, CA 92009

/s/ \_\_\_\_\_

Kelsie Rutherford