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

In the Matter of	)	
	)	
Intelsat License LLC	)	File Nos. SAT-LOA-20170524-00078 &
	)	SAT-AMD-20170613-00086
Application for Authority to Launch and	)	Call Sign S3015
Operate Galaxy 15R at 133° W.L.	)	

INFORMAL OBJECTION OF O3B LIMITED AND SES AMERICOM, INC.

O3b Limited ("O3b") and SES Americom, Inc. ("SES Americom," and with O3b, the "SES Companies") hereby submit this informal objection to the above-referenced applications in which Intelsat License LLC ("Intelsat") is seeking authority to launch the Galaxy 15R space station and operate it in C-, Ku-, and Ka-band spectrum at 133° W.L.[1] The Galaxy 15R Filings do not show that the proposed satellite can effectively share Ka-band frequencies with non-geostationary orbit ("NGSO") fixed-satellite service ("FSS") systems and lack the necessary interference analysis required for Ka-band geostationary orbit ("GSO") FSS systems. As a result, the filings are inherently incomplete and should be dismissed. At a minimum, action on the Galaxy 15R Filings must be deferred pending further proceedings to allow a comprehensive analysis of Intelsat's planned operations based on the ability to review an application that fully complies with Commission requirements.

[1] Intelsat License LLC., Call Sign S3015, File Nos. SAT-LOA-20170524-00078 (the "Galaxy 15R Application") and SAT-AMD-20170613-00086 (the "Galaxy 15R Amendment," and with the Galaxy 15R Application, the "Galaxy 15R Filings"). The Commission placed the Galaxy 15R Application on Public Notice on November 24, 2017, and issued a Public Notice describing the Galaxy 15R Amendment on December 1, 2017. Accordingly, petitions to deny or comments were due no later than January 2, 2018 under Section 25.154(a) of the Commission's rules. 47 C.F.R. § 25.154(a)(2). The rule further specifies that filings which do not comply with the time limits and other provisions of Section 25.154(a) will be classified as informal objections. *See* 47 C.F.R. § 25.154(b)(1).

INTRODUCTION

The SES Companies have a strong interest in the Galaxy 15R Filings because SES operates both NGSO and GSO satellites in Ka-band spectrum. O3b provides high-throughput, low-latency connectivity for enterprise, government, and mobility clients via a Ka-band NGSO satellite network authorized to serve the United States.[2] O3b currently operates twelve satellites in a Medium Earth Orbit configuration, and has requested authority for additional spacecraft and spectrum in order to accommodate growing demand for O3b's high-performance connectivity.[3]

SES Americom's Ka-band GSO operations include SES-15, a high throughput satellite that began operations earlier this month at 129.15° W.L., less than four degrees away from the orbital location requested for Galaxy 15R. SES-15 is licensed to SES Americom's subsidiary, SES Satellites (Gibraltar) Ltd., and has been granted U.S. market access for operations in Ka-band frequencies.[4]

Review of the Galaxy 15R Filings reveals two fundamental defects, each of which renders Intelsat's request for authority to operate Galaxy 15R incomplete and subject to dismissal.

I. INTELSAT HAS NOT SHOWN THAT IT CAN USE NGSO-PRIMARY SPECTRUM WITHOUT CAUSING UNACCEPTABLE INTERFERENCE

First, Intelsat has failed to make any substantive showing that its proposed operations in the 28.6-29.1 GHz and 18.8-19.3 GHz bands, in which NGSO FSS systems such as the O3b

[2] O3b Limited, Call Sign S2935, File Nos. SAT-LOI-20141029-00118 & SAT-AMD-20150115-00004, grant-stamped Jan. 22, 2015, corrected and re-issued June 2, 2015.

[3] O3b Limited, Call Sign S2935, File Nos. SAT-MOD-20160624-00060; SAT-AMD-20161115-00116; & SAT-AMD-20170301-00026 (collectively, the "Pending O3b Applications").

[4] SES Satellites (Gibraltar) Ltd, Call Sign S2951, File Nos. SAT-PPL-20160126-00007, granted July 12, 2016; SAT-MPL-20160718-00063, granted Dec. 14, 2016; and SAT-MPL-20170914-00130, granted Nov. 22, 2017.

network have primary status (together, the "NGSO Primary Bands"),[5] are compatible with existing and future NGSO systems. The Galaxy 15R Amendment contains a bare assertion that "Intelsat will accept interference from, and not cause interference to, NGSO FSS operators."[6] Intelsat goes on to allege that authorizing Galaxy 15R to use the NGSO Primary Bands would therefore be consistent with Commission precedent, citing to decisions involving the Hughes Ka-band satellite authorized at the nominal 97° W.L. orbital location.[7] Intelsat, however, ignores the fact that in support of its request to use the NGSO Primary Bands, Hughes provided a:

> quantitative demonstration that its secondary GSO operations in the primary NGSO uplink band at 28.6-29.1 GHz, as well as its operations in the primary NGSO downlink band at 18.8-19.3 GHz, under the waiver authority requested herein, will not cause harmful interference to present or future users with superior authorization status.[8]

The Galaxy 15R Filings include no comparable showing to establish that Intelsat's proposed operations will adequately protect existing or future NGSO constellations from harmful interference or that terminals communicating with Galaxy 15R will be able to operate

[5] At the time Intelsat submitted the Galaxy 15R Amendment, GSO FSS systems were secondary to NGSO FSS networks in the 28.6-29.1 GHz band segment, but there was no allocation for GSO FSS systems in the 18.8-19.3 GHz band. Accordingly, Intelsat requested a waiver of footnote NG165 of the U.S. Table of Allocations to permit it to use the 18.8-19.3 GHz band on a nonconforming basis. *See* Galaxy 15R Amendment, Legal Narrative at 6-7. In a subsequent order, the Commission decided to permit GSO FSS use of the 18.8-19.3 GHz band on an unprotected, non-interference basis with respect to NGSO FSS systems and revised footnote NG165 accordingly. *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 (rel. Sept. 27, 2017) (the "NGSO Order") at ¶¶ 11-16. As a result of this action, GSO FSS operations are now secondary to NGSO FSS systems in both 28.6-29.1 GHz and 18.8-19.3 GHz spectrum.

[6] Galaxy 15R Amendment, Legal Narrative at 7.

[7] *See id.*, Legal Narrative at 7 & n.25.

[8] Hughes Network Systems, LLC, Call Sign S2834, File No. SAT-LOI-20110809-00148, Letter of Intent at 11.

successfully notwithstanding interference from primary NGSO networks. The Galaxy 15R Amendment contains one paragraph arguing that Galaxy 15R should be permitted to transmit in the 18.8-19.3 GHz band in which NGSO systems are primary,[9] but provides no description of how such operations would avoid interfering with O3b's operations. While the NGSO-primary downlink band is dealt with in this cursory manner, there is no discussion at all of interference management in the 28.6-29.1 GHz uplink portion of the NGSO Primary Bands that is relied on by O3b. In fact, Intelsat does not even mention the existence of the O3b Ka-band NGSO system in either the Galaxy 15R Amendment or any of the other Intelsat submissions filed in this application proceeding.

Nor does Intelsat acknowledge the other Ka-band NGSO system proposals submitted in response to the Commission's announcement in mid-2016 of an NGSO processing round.[10] These systems reflect a variety of network designs and orbital characteristics. For example, in the Pending O3b Applications, O3b has proposed to add satellites to its existing equatorial orbit constellation and also to deploy a new set of inclined orbit spacecraft. Intelsat has recognized that NGSO systems have primary status in the 28.6-29.1 GHz and 18.8-19.3 GHz bands and has committed to "protecting the operations over the United States of all existing and future NGSO systems" in these bands.[11] But Intelsat has not explained how it would make good on that

[9] Galaxy 15R Amendment, Legal Narrative at 7.

[10] *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").

[11] Letter from Cynthia J. Grady, Regulatory Counsel, Intelsat Corporation, to Marlene H. Dortch, Secretary, Federal Communications Commission, File Nos. SAT-LOA-201 70524-00079 and SAT-AMD-20170613-00086, dated Nov. 21, 2017 (the "Intelsat November 21 Supplement") at 1.

commitment with respect to either the operational O3b network or to any of the diverse Ka-band NGSO systems that are on the horizon.

Commission precedent requires additional evidence that Intelsat's proposal for non-interfering use of the NGSO Primary Bands is feasible. The Galaxy 15R Amendment correctly observes that the Commission has allowed operations inconsistent with the Table of Allocations "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."[12] Yet Intelsat has not provided any basis for the Commission to determine how big a risk of interference Intelsat's planned operations pose to current or future NGSO systems. Simply asserting that Intelsat will avoid causing interference is not enough. Instead, Intelsat must explain what mechanism it will use to prevent interference to NGSO systems and how it will ensure that the Galaxy 15R network will terminate transmissions in the NGSO Primary Bands whenever needed to protect operations of O3b or other future NGSO FSS providers.

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 require anchor bands in which spectrum access cannot be hindered by other services, and the Commission has explicitly recognized that "preserving the 18.8-19.3 GHz and 28.6-29.1 GHz bands for more intensive use by burgeoning NGSO FSS systems will serve the public interest."[13] In designing its system, O3b relied on having access to these frequencies on a primary basis, with effective protection from harmful interference due to GSO operations. The

[12] Galaxy 15R Amendment, Legal Narrative at 4, *quoting The Boeing Company*, 16 FCC Rcd 22645, 22651 (IB & OET 2001).

[13] NGSO Order at ¶ 14.

numerous applications filed in response to the Ka-Band NGSO Processing Round Notice indicate the strong interest in establishing new NGSO systems. It is therefore 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 operations from harmful interference.

Intelsat's failure to describe how it would guarantee protection of primary NGSO operations justifies dismissal of the Galaxy 15R Filings under Section 25.112 of the Commission's rules. Specifically, that rule states that an application will be unacceptable for filing if it "is defective with respect to completeness of answers to questions, [or] informational showings."[14] The fact that the Galaxy 15R Filings were placed on public notice does not preclude the Commission from subsequently dismissing them. As with every report of satellite applications accepted for filing, the public notices for the Galaxy 15R Filings state that the "Commission reserves the right to return any of the applications if, upon further examination, it is determined that the application is not in conformance with the Commission's rules or its policies."[15]

At a minimum, before it can further consider the Galaxy 15R Filings, the Commission must require Intelsat to provide a substantive showing of its ability to operate on an unprotected, non-interference basis in the NGSO Primary Bands. Specifically, Intelsat should be required to describe how the satellite and its associated earth stations would determine when operations in the NGSO Primary Bands must cease to avoid causing harmful interference to NGSO operations and how the network would ensure that use of the bands does not recommence until the threat of

[14] 47 C.F.R. § 25.112.

[15] *See, e.g.,* Satellite Policy Branch Information, Space Station Applications Accepted for Filing, Report No. SAT-01284 (Nov. 24, 2017) at 1.

interference is over. Such a showing should then be subject to review and comment by O3b and the prospective operators of other NGSO systems.

II. THE GALAXY 15R FILINGS LACK THE TWO-DEGREE SPACING ANALYSIS REQUIRED FOR GSO FSS SATELLITE APPLICATIONS

The second defect in the Galaxy 15R Filings is Intelsat's failure to include a demonstration that proposed operations of Galaxy 15R will be compatible with operations of other GSO FSS networks in certain Ka-band frequency segments. Intelsat submitted an interference analysis addressing these matters in a supplement filed just last week,[16] well after the Galaxy 15R Filings were placed on public notice as acceptable for filing. The supplement was filed to provide "an interference analysis pursuant to Rule 25.140(a)(3)(v),"[17] highlighting the fact that the original Galaxy 15R Filings did not include the showing required by that rule section or seek a waiver of the rule to justify noncompliance.

As with the lack of a substantive showing on sharing with NGSO systems, the absence of the required demonstration of compliance with the two-degree spacing rules for operation of GSO FSS systems in Ka-band frequencies justifies dismissal of the Galaxy 15R Filings under Section 25.112, which makes clear that an application that "does not substantially comply with the Commission's rules" is unacceptable for filing and will be returned to the applicant.[18] Section 25.114, which delineates the information that is required as part of a space station application, explicitly states that FSS applicants must "include the information specified in

[16] Letter from Jennifer D. Hindin, Counsel to Intelsat License LLC, to Marlene H. Dortch, Secretary, Federal Communications Commission, File Nos. SAT-LOA-201 70524-00078 and SAT-AMD-20170613-00086, dated Dec. 27, 2017 (the "Intelsat December 27 Supplement").

[17] *Id*. at 1.

[18] 47 C.F.R. § 25.112(a)(2).

§ 25.140(a)."[19] The lack of this required information in the Galaxy 15R Filings is therefore grounds for dismissal.

Moreover, the Intelsat December 27 Supplement is simply the latest in a series of filings that appear to be intended to attempt to plug holes in the original submissions. As noted above, Intelsat has also filed a supplement to express its commitment to protect NGSO systems from interference. In addition, last October Intelsat filed a supplement at the request of International Bureau staff to provide power flux density calculations for Ka-band frequencies.[20] In its petition to deny the Galaxy 15R Filings, Iridium Satellite LLC has observed that Intelsat's submissions do not supply information required under Commission rules regarding the company's planned operations in the 29.25-29.3 GHz band.[21]

The Commission's rules do not contemplate that an application would be considered notwithstanding multiple omissions of required information. To the contrary, Section 25.116 makes clear that if an application is defective under Section 25.112, amendments will not be considered,[22] even if they are attempts to cure the defects. The same policy should apply to reject consideration of the series of Intelsat supplements supplying basic information that is required to permit interested parties to make informed and timely analysis of a pending application. As discussed above, the Commission clearly retains the ability to dismiss the Galaxy 15R Filings even though they have already been placed on public notice.

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[19] 47 C.F.R. § 25.114(d)(7).

[20] Letter from Cynthia J. Grady, Regulatory Counsel, Intelsat Corporation, to Marlene H. Dortch, Secretary, Federal Communications Commission, File Nos. SAT-LOA-201 70524-00078 and SAT-AMD-20170613-00086, dated Oct. 2, 2017 at 1.

[21] Petition to Deny of Iridium Satellite LLC, File No. SAT-LOA-201 70524-00078, filed Dec. 22, 2017 at 3-5.

[22] 47 C.F.R. § 25.116(b)(5).

Because Intelsat failed to include required information regarding Galaxy 15R's compliance with the Commission's two-degree spacing rules for operations of Ka-band GSO satellites, the Galaxy 15R Filings should be dismissed without prejudice to refiling. Such action is justified by the clear specifications of the Commission's rules, as discussed above. At a minimum, the Commission must suspend processing of the Galaxy 15R Filings and should issue a further public notice regarding the Intelsat December 27 Supplement. By doing so, the Commission can ensure that interested parties have the opportunity to comment on the Ka-band interference analysis submitted in that supplement, which was not a part of the record at the time the Commission placed the Galaxy 15R Filings on public notice.

CONCLUSION

As discussed above, the Galaxy 15R Filings do not show that Intelsat's proposed secondary use of the 18.8-19.3 GHz and 28.6-29.1 GHz bands will be compatible with NGSO use of these frequencies by O3b or other prospective NGSO operators. Furthermore, Intelsat did not timely provide the interference analysis required by Commission rules for Ka-band GSO systems. Under these circumstances, the Galaxy 15R Filings should be dismissed. At the very least, the Commission should suspend processing of the Galaxy 15R Filings pending Intelsat's submission of an adequate showing with respect to use of the NGSO Primary Bands and should

provide a further opportunity for comment on Intelsat's belatedly filed Ka-band two-degree spacing analysis.

Respectfully submitted,

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January 5, 2018

CERTIFICATE OF SERVICE

I hereby certify that on this 5th day of January, 2018, I caused a true and correct copy of the foregoing "Informal Objection of O3b Limited and SES Americom, Inc." to be sent by first class mail, postage prepaid, to the following:

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