

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

In the Matter of)	
)	
Kuiper Systems LLC)	File No. SAT-MOD-20210806-00095
Application for Modification of Authority for the)	Call Sign S3051
Kuiper NGSO Satellite System)	
)	
Space Exploration Holdings, LLC)	File No. SAT-MOD-20200417-00037
Application for Modification of Authority for the)	Call Signs S2983 and S3018
SpaceX NGSO Satellite System)	

COMMENTS OF SES AMERICOM, INC. AND O3B LIMITED

SES Americom, Inc. (“SES Americom”) and O3b Limited (“O3b,” and collectively, “SES”) hereby comment on the above-captioned modification application of Kuiper Systems LLC (“Amazon”)¹ and the pending proceedings on reconsideration regarding the Commission’s decision granting the above-captioned Space Explorations Holdings, LLC (“SpaceX”) modification application² to address an issue that is common to both: how the Commission can effectively and fairly enforce limits on a non-geostationary orbit (“NGSO”) satellite system’s equivalent power-flux density (“EPFD”) when the NGSO system is relying on multiple International Telecommunication Union (“ITU”) filings. In order to ensure that geostationary orbit (“GSO”) operations are protected, SES urges the Commission to require such NGSO systems to make available both their own EPFD calculation results from the ITU’s validation software and the data necessary to allow interested parties to verify those results.

¹ Kuiper Systems LLC, Call Sign S3051, File No. SAT-MOD-20210806-00095 (“Amazon Modification”), seeking alteration of the terms adopted in *Kuiper Systems LLC*, Order and Authorization, 35 FCC Rcd 8324 (2020) (“Amazon Order”).

² *Space Exploration Holdings, LLC*, Order and Authorization and Order on Reconsideration, 36 FCC Rcd 7995 (2021) (“SpaceX Order”), granting Space Exploration Holdings, LLC, Call Signs S2983 and S3018, File No. SAT-MOD-20200417-00037 (“SpaceX Third Modification”).

I. INTRODUCTION AND BACKGROUND

SES is uniquely affected by EPFD compliance matters. As the operator of GSO spacecraft in the Ku- and Ka-band spectrum segments where EPFD limits apply internationally to facilitate sharing between NGSO and GSO systems, SES has a strong interest in Commission policies that ensure those limits are met and compliance can be independently verified. And as an NGSO operator of the O3b Ka-band fleet that is subject to the EPFD limits, SES needs regulatory certainty regarding its own EPFD compliance obligations and relies on even-handed application of relevant requirements. Commission policies to date addressing NGSO systems with multiple ITU filings have not achieved these objectives.

Under Section 25.146, before commencing operations an NGSO applicant for Ku- or Ka-band spectrum must receive a “favorable” or “qualified favorable” finding by the ITU’s Radiocommunication Bureau in accordance with Resolution 85 of the ITU Radio Regulations with respect to the applicant’s compliance with relevant ITU EPFD limits and must submit the input data files used for the ITU validation software.³ The Commission also requires that NGSO applicants certify that they will meet the international EPFD limits.⁴ The Commission does not conduct its own evaluation of an applicant’s EPFD compliance, having concluded that such a “review would duplicate that performed by the ITU.”⁵

Developments since that rule was adopted have exposed the drawbacks of depending solely on the ITU’s assessment of an NGSO system’s EPFD performance. As SES and others

³ 47 C.F.R. § 25.146(c).

⁴ 47 C.F.R. § 25.146(a).

⁵ *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, 7822, ¶ 41 (2017).

pointed out in the proceedings leading up to adoption of the Amazon Order, the ITU's process is not designed to assess whether an NGSO system relying on multiple ITU filings satisfies relevant EPFD limits; each ITU filing is assessed for compliance individually, not in conjunction with other filings.⁶ Moreover, the ITU's backlog in processing EPFD compliance showings creates considerable uncertainty for GSO operators regarding whether compliance findings will be made in a timely fashion.⁷ Citing this backlog, SpaceX has requested and received a rule waiver allowing it to commence operations prior to an ITU finding on the SpaceX EPFD levels.⁸ Given these issues, SES urged the Commission to require Amazon to promptly make publicly available the underlying data files supporting its EPFD compliance claims to enable GSO operators to verify that the system would meet EPFD limits.⁹

The Amazon Order attempted to address concerns regarding the EPFD levels of the complete Amazon system by requiring Amazon to submit an ITU finding “that explicitly indicate[s] that the joint effect of Kuiper’s ITU filings associated with its constellation was taken into account when verifying compliance with the applicable EPFD limits.”¹⁰ The Commission

⁶ See Amazon Order, 35 FCC Rcd at 8331, ¶ 26 & n.56. See also, e.g., Petition to Dismiss or Defer of SES Americom, Inc. and O3b Limited, File No. SAT-LOA-20190704-00057 (filed Oct. 28, 2019) (“SES 2019 Amazon Petition”) at 12-15; Comments of Hughes Network Systems, LLC, Intelsat License LLC, and Inmarsat, Inc., File No. SAT-LOA-20190704-00057 (filed Oct. 28, 2019) at 2-4.

⁷ SES 2019 Amazon Petition at 13-14 (observing that it took until August of 2019 for the ITU to issue its findings on an EPFD submission filed in December of 2016).

⁸ See SpaceX Order, 36 FCC Rcd at 8017, ¶ 32 & n.148, citing *Space Exploration Holdings, LLC*, Order and Authorization, 34 FCC Rcd 2526, 2536 (IB 2019).

⁹ SES 2019 Amazon Petition at 16-17.

¹⁰ Amazon Order, 35 FCC Rcd at 8331, ¶ 27. The Commission adopted this mandate based on Amazon’s express representation “that ‘ITU experts are entirely qualified to process Amazon’s filing and are well aware of the interconnected nature of the three Amazon ITU submissions.’” *Id.*, quoting Consolidated Opposition and Response of Kuiper Systems LLC, File No. SAT-LOA-20190704-00057 (filed Nov. 13, 2019) at 26.

also agreed that Amazon must be required to produce its EPFD compliance input data files but declined to specify that the information must be available to GSO operators or other interested parties before Amazon initiates service.¹¹

In its subsequent action on the SpaceX Third Modification, the Commission departed from the Amazon precedent, expressly declining to apply the “joint effect” condition in the Amazon Order to SpaceX.¹² The Commission reasoned that “the ITU is in the best position to determine whether SpaceX appropriately relied on multiple ITU filings in its analysis.”¹³ Both the Amazon and SpaceX decisions ignored the fact that ITU regulations do not provide for assessing EPFD compliance based on a combination of ITU filings. Current ITU regulations require an evaluation of EPFD compliance for each ITU filing related to an NGSO system, but not for the NGSO system as a whole if the system relies on multiple ITU filings.

The Commission’s divergent treatment of Amazon and SpaceX has generated objections in both proceedings. In its modification Amazon argues that it must be relieved of the condition in the Amazon Order requiring an EPFD compliance finding based on the “joint effect” of Amazon’s ITU filings since the Commission did not impose the same condition on SpaceX or other NGSO operators such as O3b.¹⁴ Meanwhile, Hughes Network Systems, LLC (“Hughes”) is seeking reconsideration of the decision in the SpaceX Order not to apply the “joint effect” condition from the Amazon Order to SpaceX.¹⁵ In each proceeding, a central argument is that the

¹¹ Amazon Order, 35 FCC Rcd at 8331-32, ¶ 26. *See also id.* at 8345, ¶ 60.

¹² SpaceX Order, 36 FCC Rcd at 8017-18, ¶¶ 33-34.

¹³ *Id.* at 8018, ¶ 34.

¹⁴ Amazon Modification at 3, 7-10.

¹⁵ Hughes Petition for Reconsideration, Call Signs S2983 and S3018, File No. SAT-MOD-20200417-00037 (filed May 27, 2021) (“Hughes Reconsideration Petition”) at 2-5.

Administrative Procedure Act and principles of reasoned decision-making require the Commission to be consistent in its treatment of similarly situated applicants.¹⁶

SES strongly agrees that the Commission must rationalize its approach to EPFD compliance issues but does not endorse the solution suggested by Amazon or fully support the approach set forth by Hughes. Granting Amazon's request that the Commission remove any reference to confirming the EPFD levels of Amazon's licensed NGSO constellation as a whole would fail to provide GSO operators with assurance that their operations will be protected. But extending the "joint effect" EPFD condition language from the Amazon Order to SpaceX as Hughes proposes would be equally ineffective – that condition is impossible to satisfy since the ITU does not and cannot calculate the combined EPFD levels produced by satellites described in multiple ITU filings for the same NGSO system.

SES urges the Commission instead to focus on another aspect of the relief sought by Hughes: a requirement that an NGSO applicant relying on multiple ITU filings provide the input data necessary to run the ITU compliance software for its system as a whole.¹⁷ SES proposes that the Commission add to that a mandate to supply interested parties with the results of the applicant's own ITU software runs to verify its EPFD compliance. These data elements together will ensure that both GSO operators and other NGSO operators can independently confirm whether an NGSO applicant's representations of its system's compliance with the ITU's single-entry EPFD limits are accurate.

¹⁶ See Amazon Modification at 7-9; Hughes Reconsideration Petition at 2.

¹⁷ Hughes Reconsideration Petition at 5-6.

II. THE COMMISSION SHOULD IMPOSE DATA SUBMISSION REQUIREMENTS ON ALL NGSO APPLICANTS RELYING ON MULTIPLE ITU FILINGS

To adequately address EPFD compliance matters for NGSO systems with multiple underlying ITU filings, the Commission must mandate that such applicants make available a comprehensive set of information on their systems' EPFD characteristics. As Hughes has requested, this data should include all the elements needed to run the ITU's validation software.¹⁸ To facilitate the ability of interested parties to verify the applicant's EPFD compliance, SES urges the Commission to also require the applicant to share the results it derived from its own calculations using the ITU software. SES's proposal for a revised version of the condition sought by Hughes is set forth below, with the SES changes underlined. The Commission should specify that an NGSO applicant relying on multiple ITU filings:

must make available to any requesting party within 30 days of the request: the data used as input to the ITU-approved validation software to demonstrate compliance with applicable Equivalent Power Flux Density (EPFD) limits as well as the EPFD results it obtained by running the ITU software, along with confirmation that the EPFD input data files and results reflect the operations of its complete system pursuant to all ITU filings associated with its NGSO satellite constellation.

Imposing this condition – on Amazon and SpaceX, as well as on O3b and other NGSO system operators – will serve the public interest by establishing a workable and even-handed approach to ensuring NGSO systems approved by the Commission comply with international EPFD limits. The condition supports the objectives that Section 25.146 is intended to achieve by allowing reliance on ITU software to validate whether an applicant meets relevant single-entry EPFD limits and fills the gap created under existing ITU procedures, which do not comprehensively evaluate an NGSO system that relies on multiple ITU filings.

¹⁸ See *id.* at 6 (proposing modification of condition in paragraph 97(q) of the SpaceX Order).

Moreover, the condition does not create material new burdens for NGSO applicants or for the Commission in processing NGSO applications. Section 25.146 mandates that applicants submit the data files necessary to run the ITU's validation software and certify that their proposed networks will comply with ITU EPFD limits.¹⁹ To make that certification, applicants presumably run their data files through the ITU's software themselves to confirm that their systems conform to the EPFD limits. SES's condition would simply require NGSO applicants to share the files and results with third parties to facilitate independent confirmation of EPFD compliance.

III. CONCLUSION

For the foregoing reasons, SES urges the Commission to include the condition set forth above in any grant of the Amazon Modification and in any reconsideration of the SpaceX Order as well as to impose it on other NGSO operators that rely on multiple ITU filings.

Respectfully submitted,

/s/ Daniel C.H. Mah

Vice President, Legal and Regulatory Affairs
SES Americom, Inc.
1129 20th Street, NW, Suite 1000
Washington, DC 20036

/s/ Suzanne Malloy

Vice President, Regulatory Affairs
O3b Limited
1129 20th Street, NW, Suite 1000
Washington, DC 20036

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¹⁹ 47 C.F.R. § 25.146(a) and (c).

CERTIFICATE OF SERVICE

I hereby certify that on this 20th day of September, 2021, I caused to be served a true and correct copy of the foregoing “Comments of SES Americom, Inc. and O3b Limited” by first-class mail on the following:

Julie Zoller
Mariah Dodson Shuman
Kuiper Systems LLC
410 Terry Avenue N
Seattle, WA 98109

David Goldman
Space Exploration Technologies Corp.
1155 F Street, N.W.
Suite 475
Washington, D.C. 20004

Jennifer D. Hindin
Wiley Rein LLP
1776 K Street NW
Washington, DC 20006
Counsel to Kuiper Systems LLC

William M. Wiltshire
Harris, Wiltshire & Grannis LLP
1919 M Street, N.W.
Suite 800
Washington, D.C. 20036
Counsel to SpaceX

Jennifer A Manner
Senior Vice President, Regulatory Affairs
Hughes Network Systems, LLC
11717 Exploration Lane
Germantown, MD 20876

/s/ _____
Suzanne Malloy