

**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	)	

**REPLY OF SES AMERICOM, INC. AND O3B LIMITED**

SES Americom, Inc. and O3b Limited (collectively, “SES”) submit this reply regarding the above-captioned Kuiper Systems LLC (“Amazon”) modification application<sup>1</sup> and pending reconsideration of the decision granting the above-captioned Space Exploration Holdings, LLC (“SpaceX”) modification application.<sup>2</sup> As the initial SES comments demonstrate, the Commission should require Amazon and SpaceX to supply data confirming that their non-geostationary orbit (“NGSO”) satellite systems will comply with equivalent power-flux density (“EPFD”) limits of the International Telecommunication Union (“ITU”).<sup>3</sup> The SES proposal will ensure that geostationary orbit (“GSO”) satellite networks and their customers are adequately protected from interference by supporting enforcement of the ITU’s single entry EPFD limits and facilitating cooperation among NGSO systems needed to meet aggregate EPFD limits.

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<sup>1</sup> 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”).

<sup>2</sup> *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”).

<sup>3</sup> Comments of SES Americom, Inc. and O3b Limited, File Nos. SAT-MOD-20210806-00095 & SAT-MOD-20200417-00037, filed Sept. 20, 2021 (“SES Comments”).

Neither Amazon<sup>4</sup> nor SpaceX<sup>5</sup> presents a valid objection to imposition of the condition set forth in the SES Comments.

## **I. INTRODUCTION AND BACKGROUND**

The SES Comments observe that the Amazon Modification and reconsideration of the SpaceX Order both raise the issue of how to ensure NGSO systems that rely on multiple ITU filings satisfy the relevant ITU EPFD limits. Section 25.146 of the Commission’s rules requires NGSO operators to certify they will meet applicable EPFD limits, receive a “favorable” or “qualified favorable” finding from the ITU Radiocommunication Bureau regarding their compliance with such limits, and submit the input data files used for the ITU validation software.<sup>6</sup> However, the rule does not explicitly address how EPFD compliance will be determined if an NGSO system is comprised of elements described in more than one ITU filing.

Amazon is asking the Commission to remove a condition specifying that the company must 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.”<sup>7</sup> This condition was imposed in response to concerns raised by SES, SpaceX, and others that even if Amazon complied “with the Commission’s rules, it could still cause unacceptable interference to GSO networks because it has submitted multiple ITU filings for its system, which means that the ITU will issue an analysis based on each filing rather

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<sup>4</sup> Kuiper Systems LLC Reply to Comments of SES Americom, Inc. and O3b Limited, File No. SAT-MOD-20210806-00095, filed Oct. 5, 2021 (“Amazon Response”).

<sup>5</sup> Response of Space Explorations Holdings, LLC, File Nos. SAT-MOD-20210806-00095 & SAT-MOD-20200417-00037, filed Sept. 30, 2021 (“SpaceX Response”).

<sup>6</sup> 47 C.F.R. § 25.146(a), (c).

<sup>7</sup> Amazon Order, 35 FCC Rcd at 8331, ¶ 26.

than Kuiper’s entire system.”<sup>8</sup> Amazon did not challenge this language at the time, but now objects to it in part based on the absence of a similar “joint effect” condition in the SpaceX Order.<sup>9</sup> Hughes Network Systems, LLC (“Hughes”), meanwhile, opposes the Commission’s decision not to impose a “joint effect” condition on SpaceX and is seeking reconsideration of the SpaceX Order on that basis.<sup>10</sup>

The SES Comments support a consistent approach that will effectively enforce EPFD limits but stress that neither removing the “joint effect” condition for Amazon or extending it to SpaceX would achieve that objective. Instead, SES proposes the following condition language that builds on what the Hughes Reconsideration Petition seeks, requiring that Amazon and SpaceX:

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.

SES’s suggested approach should be noncontroversial, as it addresses the problem of how to ensure that NGSO systems relying on multiple ITU filings comply with EPFD limits without requiring the Commission to conduct a duplicative EPFD analysis or imposing significant new

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<sup>8</sup> *Id.* (footnote omitted). *See also* Reply of Space Explorations Holdings, LLC, File No. SAT-LOA-20190704-00057, filed Nov. 25, 2019 (“SpaceX 2019 Reply to Amazon”) at 22 (Amazon’s calculations to show EPFD compliance were apparently based on “separate assessments for each of its three orbital shells rather than for its entire constellation as a whole,” but EPFD calculations performed on a system-wide basis are needed to demonstrate that Amazon’s “proposed operations will not cause interference to protected licensees”).

<sup>9</sup> Amazon Modification at 3, 7-10.

<sup>10</sup> 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.

burdens on NGSO applicants.<sup>11</sup> Moreover, any NGSO operator whose system meets the ITU’s EPFD limits should have no objection to providing evidence to confirm that compliance. Nevertheless, both Amazon and SpaceX challenge the SES proposal, falsely suggesting that it conflicts with existing substantive and procedural requirements.<sup>12</sup> The Commission should reject these baseless arguments and implement the condition set forth in the SES Comments.

## **II. SES’S PROPOSED DATA REQUIREMENTS WILL SERVE THE PUBLIC INTEREST BY ENABLING CONFIRMATION OF EPFD COMPLIANCE**

In addressing the EPFD issues raised by the Amazon Modification and SpaceX reconsideration proceedings, the Commission must focus on the underlying goal of the EPFD limits: “to protect GSO networks” from NGSO transmissions in bands where GSO networks are accorded primary status and NGSO systems are secondary.<sup>13</sup> To achieve that goal and prevent disruption of services to GSO customers, the Commission must implement both the ITU’s single entry EPFD limits that apply to individual NGSO systems and the aggregate limits that all NGSO systems must collectively meet. The Commission has relied on a combination of rule provisions and conditions on licenses and market access grants to enforce these limits.

The condition SES proposes is consistent with this precedent and is premised on two undisputed facts. First, determining whether an NGSO system complies with ITU EPFD limits requires assessment of the system as a whole – calculating whether an individual ITU filing meets those limits is not a valid substitute. The Commission explicitly highlighted this issue in the Amazon Order, and the “joint effect” condition Amazon is now trying to escape was an

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<sup>11</sup> See SES Comments at 6-7.

<sup>12</sup> See, e.g., SpaceX Response at 1 (accusing SES of attempting to establish a “new rule that conflicts with the ones set and administered by the ITU”); Amazon Response at 2 (alleging that the SES proposal raises “a host of fresh [Administrative Procedure Act] issues”).

<sup>13</sup> See, e.g., Amazon Order, 35 FCC Rcd at 8327, ¶¶ 13, 14.

attempt to address the possibility that an applicant relying on multiple ITU filings could exceed EPFD limits even if it complied with relevant Commission rules.<sup>14</sup>

Second, the ITU process does not assess whether an NGSO system relying on multiple ITU filings satisfies relevant EPFD limits; instead, each ITU filing is evaluated for compliance individually, not in conjunction with other filings.<sup>15</sup> As the SES Comments highlight, the flaw in the “joint effort” condition is that it cannot be satisfied because the ITU does not take into account multiple ITU filings in its EPFD calculations.<sup>16</sup> SES’s proposed approach would allow the Commission to ensure that NGSO operators with multiple underlying ITU filings do not evade the EPFD limits, while recognizing the reality that ITU procedures do not provide for systemwide EPFD calculations.

The condition SES recommends fully conforms to Commission policies. The provisions of Section 25.146, including the international EPFD limits incorporated in the rule, would continue to apply, and NGSO systems that rely on a single ITU filing would not be subject to any new requirements relating to EPFD compliance.<sup>17</sup> The additional data requirements SES seeks would be triggered upon request by an interested party in cases where an NGSO system relies on multiple ITU filings – a scenario that the Commission did not expressly consider at the time Section 25.146 was adopted. Nor would the Commission staff be called on to perform EPFD calculations under the SES proposal, in line with the Commission’s desire to avoid

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<sup>14</sup> *Id.* at 8331, ¶ 26.

<sup>15</sup> *See id.* at 8331, ¶ 26 & n.56.

<sup>16</sup> *See* SES Comments at 5. Thus, Amazon’s argument that the ITU is in the “best position” to evaluate the appropriateness of an operator’s reliance on multiple ITU filings (Amazon Response at 6 & n.28) is irrelevant. The fact remains that the ITU does not perform any such evaluation.

<sup>17</sup> Thus, claims that the SES proposal is contrary to the Commission’s rules (Amazon Response at 5; SpaceX Response at 4) or that SES is seeking a “different EPFD standard” (SpaceX Response at 4) are without merit.

duplicating the ITU’s efforts to evaluate EPFD compliance showings.<sup>18</sup> The SES condition would merely ensure that potentially affected parties could obtain timely access to the information needed to verify an NGSO operator’s compliance with ITU EPFD limits on a systemwide basis – an assessment that the ITU does not perform.<sup>19</sup>

That outcome is consistent with the terms of the Commission’s rules. As Viasat observes, Section 25.146(c) imposes a requirement to demonstrate an NGSO “*operator’s* compliance with applicable ITU EPFD limits – as opposed to compliance under any specific ITU system filing.”<sup>20</sup> In the same way, Section 25.289 specifies that an NGSO system “operating in compliance with the applicable [EPFD] limits . . . will be considered as having fulfilled” the operator’s obligation to protect GSO operations,<sup>21</sup> but makes no reference to the results of the ITU’s validation procedures. Thus, contrary to SpaceX’s assertions, a favorable finding by the ITU is not “the end of the inquiry under the Commission’s rules,”<sup>22</sup> as such a finding will necessarily be limited to assessment of a single ITU filing and does not confirm whether “an NGSO *system* complies with the ITU’s EPFD limits.”<sup>23</sup> Moreover, claims that the Commission did not intend for third parties

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<sup>18</sup> *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) (“NGSO Order”).

<sup>19</sup> Amazon asserts that the Commission’s refusal in the Amazon Order to require Amazon to submit its ITU input data files prior to commencing operations forecloses any such relief now (Amazon Response at 5-6), but ignores the fact that at the time the Commission was relying on other measures, including the “joint effect” condition, to protect GSO operations. Because Amazon is seeking alteration of that condition, it has opened the door for the Commission to reassess how to best ensure that Amazon’s NGSO system as a whole satisfies ITU EPFD limits.

<sup>20</sup> Reply Comments of Viasat, Inc., File No. SAT-MOD-20210806-00095, filed Oct. 5, 2021 (“Viasat Reply”) at 3 (emphasis in original).

<sup>21</sup> 47 C.F.R. § 25.289.

<sup>22</sup> SpaceX Response at 3.

<sup>23</sup> *Id.* (emphasis added).

to be able to perform their own calculations to verify an NGSO operator’s EPFD compliance<sup>24</sup> are clearly false, as the Commission adopted its Section 25.146(c) mandate that applicants submit their ITU input data files to allow “for public disclosure.”<sup>25</sup>

Contrary to the Amazon and SpaceX rhetoric, SES is not seeking to usurp the Commission’s role or take responsibility for EPFD enforcement.<sup>26</sup> SES is merely trying to prevent NGSO operators with multiple ITU filings from circumventing international EPFD limits designed to preserve the integrity of GSO systems’ service to customers. Although SpaceX now says it is “odd” for SES to seek input data files and results that cover an applicant’s complete system,<sup>27</sup> SpaceX less than two years ago stressed that systemwide EPFD calculations are essential to determine whether protected licensees would suffer harmful interference.<sup>28</sup> More fundamentally, SES is mystified as to why either SpaceX or Amazon would oppose the data sharing condition SES suggests – if their systems in fact comply with ITU EPFD limits, then they have nothing to fear from providing documentation that would prove their compliance.

Finally, ensuring that NGSO operators meet the ITU’s single entry EPFD limits is critical to implementing the ITU’s aggregate EPFD limits. Commission authorizations for NGSO systems require that each grantee “cooperate with other NGSO FSS operators in order to ensure that all authorized operations jointly comport with the applicable limits for aggregate equivalent power flux density.”<sup>29</sup> Confidence that each NGSO system meets the single-entry EPFD limits is

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<sup>24</sup> See SpaceX Response at 2; Amazon Response at 5.

<sup>25</sup> NGSO Order, 32 FCC Rcd at 7822, ¶ 41.

<sup>26</sup> See Amazon Response at 5; SpaceX Response at 1-2.

<sup>27</sup> SpaceX Response at 3.

<sup>28</sup> SpaceX 2019 Reply to Amazon at 22.

<sup>29</sup> See, e.g., Amazon Order, 35 FCC Rcd at 8344, ¶ 59(f); SpaceX Order, 36 FCC Rcd at 8048, ¶ 97(p).

a necessary foundation for the multisystem coordination mandated by the Commission to prevent exceedance of aggregate EPFD limits.

In short, the Amazon and SpaceX responses provide no valid substantive objection to SES's proposed condition, which would further Commission public interest objectives by protecting GSO systems from interference and facilitating NGSO coordination.

### **III. PROCEDURAL OBJECTIONS TO SES'S PROPOSED CONDITION ARE INVALID**

Amazon and SpaceX claims that the Administrative Procedure Act constrains the Commission's ability to apply the condition recommended by SES to their NGSO operations are also unfounded.<sup>30</sup> As discussed above, SES's proposed condition is completely consistent with Commission rules and is necessary to achieve Commission public policy objectives.

Moreover, the condition is responsive to active issues in these two proceedings. Amazon is asking the Commission to remove a license provision that was intended to address the risk that Amazon's operations could cause interference to GSO services even if evaluation of its individual ITU filings showed compliance with EPFD limits. Amazon cannot legitimately object to Commission action that would replace the existing condition with SES's proposed alternative in order to maintain protection of GSO operations.<sup>31</sup> Whether the SpaceX system conforms to EPFD limits has also been hotly contested throughout the Commission's proceedings on the SpaceX Third Modification and is squarely raised by the Hughes Reconsideration Petition.

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<sup>30</sup> See Amazon Response at 5-6; SpaceX Response at 2.

<sup>31</sup> As Viasat observes, Amazon is also attempting to evade the existing requirement that it demonstrate its EPFD compliance before commencing operations but has not requested, or provided support for, the necessary waiver of Section 25.146. See Viasat Reply Comments at 3-4. SES agrees with Viasat that Amazon is not entitled to such relief.

In these circumstances, the Commission clearly has authority to impose on Amazon and SpaceX a condition that will address the risk of harmful interference to GSO services that the Commission explicitly recognized in the Amazon Order. There is nothing “arbitrary” or “capricious”<sup>32</sup> about targeted Commission action designed to verify that these two parties meet international EPFD limits, especially given that similar concerns regarding EPFD compliance have not been raised against other NGSO systems authorized by the Commission. The Commission can satisfy its obligation to accord similar treatment to similarly situated applicants<sup>33</sup> by following the precedent it sets here with respect to Amazon and SpaceX in any future proceedings where such issues are raised. Contrary to Amazon’s claim, SES is not suggesting that the Commission retroactively impose the condition on entities that are not parties to the current proceedings,<sup>34</sup> although SES had made clear its willingness to comply with its own proposed condition for the O3b system.<sup>35</sup>

Amazon and Viasat suggest that a rulemaking rather than adjudication is the appropriate avenue for making changes to EPFD compliance policies that would be generally applicable,<sup>36</sup> and the Commission could choose to initiate such a rulemaking. But it does not follow that until a rulemaking is completed the Commission is precluded from deciding whether SES’s proposed condition should be imposed in the two pending proceedings discussed herein. Certainly there are other conditions routinely imposed by the Commission in its NGSO authorizations – such as the mandate that NGSO systems cooperate to comply with aggregate EPFD limits – that have not

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<sup>32</sup> See Amazon Response at 5 & n.23; SpaceX Response at 4.

<sup>33</sup> See, e.g., *Freeman Engineering Assoc., Inc. v. FCC*, 103 F.3d 169 (D.C. Cir. 1997).

<sup>34</sup> See *id.* at 5.

<sup>35</sup> SES Comments at 6.

<sup>36</sup> Amazon Response at 5; Viasat Reply Comments at 4.

been codified in the Commission’s rules. Any claim that the Commission lacks authority to include in an authorization requirements that are not expressly set forth in its rules would imply that all such conditions must be invalidated – clearly an absurd result.

Thus, the Commission is well within the scope of its authority to impose on Amazon and SpaceX the condition proposed by SES to protect GSO systems and their customers from harmful interference.

#### **IV. CONCLUSION**

For the foregoing reasons and those set forth in the SES Comments, 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.

Respectfully submitted,

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October 18, 2021

**CERTIFICATE OF SERVICE**

I hereby certify that on this 18th day of October, 2021, I caused to be served a true and correct copy of the foregoing “Reply of SES Americom, Inc. and O3b Limited” by first-class mail on the following:

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