

September 15, 2017

Ms. Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20554

Re: Ex Parte Communication  
Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters, IB Docket No. 16-408; Petition for Declaratory Ruling of LeoSat MA, Inc., File No. SAT-PDR-20161115-00112; Amendment to Application of O3b Limited, File No. SAT-AMD-20161115-00116; Application of Space Exploration Holdings, LLC, File No. SAT-LOA-20161115-00118; Petition for Declaratory Ruling of ViaSat, Inc., File No. SAT-PDR-20161115-00120; Application of Theia Holdings A, Inc., File No. SAT-LOA-20161115-00121; Petition for Declaratory Ruling of Kepler Communications, Inc., File No. SAT-PDR-20161115-00114; Amendment of The Boeing Company, File No. SAT-AMD-20170301-00030; Application of Telesat Canada, File No. SAT-PDR-20170301-00023

Dear Ms. Dortch:

Intelsat License LLC (“Intelsat”) files this letter in response to a recent ex parte communication filed in the above referenced docket,<sup>1</sup> as well as in certain of the above referenced applications. Specifically, Intelsat would like to stress the importance of the equivalent power flux density (“EPFD”) limits specified in Article 22 of the International Telecommunication Union (“ITU”) Radio Regulations,<sup>2</sup> as well as the importance of ensuring compliance with these limits by U.S.-licensed or U.S. market access authorized Non-Geostationary Satellite Orbit (“NGSO”) constellations. The EPFD limits are the maximum power levels that NGSO satellite networks are allowed to use in order to protect geosynchronous orbit (“GSO”) networks, including Intelsat’s network.<sup>3</sup> Non-compliance with these limits could cause harmful interference into GSO satellites from NGSO systems.

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<sup>1</sup> See Letter from Brian D. Weimer, Counsel to OneWeb, to Ms. Marlene H. Dortch, Federal Communications Commission, IB Docket No. 16-408 (Sept. 10, 2017) (“OneWeb Ex Parte”).

<sup>2</sup> The EPFD limits specified in Article 22 have been incorporated into the Federal Communications Commission’s (“FCC” or “Commission”) rules. See 47 C.F.R. § 25.208.

<sup>3</sup> Recommendation ITU-R S.1503-2 describes the necessary framework to examine NGSO systems for compliance with the EPFD limits specified in Article 22.

The ITU provides a software tool that allows users to verify compliance with Article 22 limits and this tool is adequate for carrying out these verifications, provided that correct and complete input data are used. However, because the software lacks the sophistication to check inconsistencies in the input data, the software tool may erroneously report that an NGSO system complies with the EPFD limits. Additionally, this flaw allows data to be manipulated, deliberately or accidentally, which also could result in a false verification. Therefore, it is critically important that input data provided by NGSO applicants be independently validated in accordance with ITU-R S.1503-2.

In reviewing both SpaceX's supplement to its Ku- and Ka-band application,<sup>4</sup> as well as the recent OneWeb Ex Parte,<sup>5</sup> Intelsat notes that the two parties reached different results in the same EPFD compliance showing for the SpaceX constellation. In contrast to SpaceX's supplement that only included the EPFD compliance showing results, OneWeb presented the background and key input parameters for the EPFD calculations in its ex parte filing.<sup>6</sup> OneWeb also explained its EPFD results in detail.<sup>7</sup> Disturbingly, OneWeb's presentation suggests that for SpaceX's application there are *at least* eleven scenarios where the EPFD limits are exceeded<sup>8</sup> – indicating that SpaceX failed to calculate its constellation's compliance using the “worst case” scenario as required by ITU-R S.1503-2 and the Commission's rules.<sup>9</sup> Without using “worst case” scenarios in EPFD calculations, it is impossible to ensure compliance with the Article 22 and FCC EPFD limits.

The OneWeb Ex Parte also presents several inconsistencies in the data provided by other NGSO applicants, which also create GSO interference concerns.<sup>10</sup> In addition to the issues in various applications illustrated in the OneWeb Ex Parte, Intelsat would like to point out that

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<sup>4</sup> See Letter from William M. Wiltshire, Counsel to SpaceX, to Ms. Marlene H. Dortch, Federal Communications Commission, File No. SAT-LOA-20161115-00118 (July 12, 2017).

<sup>5</sup> See *supra* n. 1.

<sup>6</sup> *Id.* at 10-35.

<sup>7</sup> *Id.* at 36-38.

<sup>8</sup> *Id.* at 37.

<sup>9</sup> 47 C.F.R. § 25.146(a)(1) (requiring the use of specification stipulated in the most recent version of ITU-R S.1503-2 for Ku-band applications). The Commission is expected to update this rule to include additional bands in the near future. See FCC Fact Sheet, Report and Order and Further Notice of Proposed Rulemaking, IB Docket No. 16-408 at 36-37 (Sept. 7, 2017), *available at* [https://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2017/db0907/DOC-346584A1.pdf](https://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0907/DOC-346584A1.pdf).

<sup>10</sup> See, e.g., OneWeb Ex Parte at 26 (indicating that Theia may not be able to meet the applicable power flux density mask). See also OneWeb Ex Parte at 32, 34.



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some of the NGSO applicants have failed even to provide *any* data regarding their EPFD showings.<sup>11</sup> In order to comply with the Commission's rules,<sup>12</sup> these applicants will need to provide EPFD showings.

In light of the foregoing, Intelsat is concerned that GSO operators will not adequately be protected from harmful interference caused by the above referenced NGSO applicants. Given the importance of ensuring protection of existing GSO operations, ideally the FCC would independently check the data provided by NGSO applicants for accuracy and compliance with the FCC rules and, where appropriate, either dismiss the non-compliant application or ask the applicant to correct its application to satisfy the EPFD requirements. However, at a minimum, the FCC should require NGSO applicants to provide as part of their application the complete set of input information used for the EPFD showing to allow interested third parties to verify the data and, if necessary, raise concerns with the Commission.<sup>13</sup>

For the reasons set forth herein, *before* granting any of the pending NGSO applications, the Commission should carefully analyze the required technical showings in those applications -- especially the EPFD showings -- and require the applicants to address the issues raised herein and in the OneWeb Ex Parte with respect to those showings.

Please direct any questions to the undersigned at (703) 559-7848.

Sincerely,



Susan H. Crandall  
Associate General Counsel  
Intelsat Corporation

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<sup>11</sup> See *The Boeing Company, Application for 2016 Ka-Band NGSO FSS/MSS System*, File No. SAT-LOA-20161115-00109 (filed Nov. 15, 2016); See *Telesat Canada, Letter of Intent For LeoVantage to Provide Service in the US*, File No. SAT-PDR-20161115-00108 (filed Nov. 15, 2016).

<sup>12</sup> 47 C.F.R. §§ 25.145-25.146.

<sup>13</sup> The requirement to provide input data should be part of any EPFD certification the Commission is considering adopting. See *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, Notice of Proposed Rulemaking, 31 FCC Rcd 13651, Section III (B) (2016).