

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
SpaceX Services, Inc.)	File Nos. SES-LIC-20190211-00151,
)	SES-LIC-20190402-00425 <i>et seq.</i> &
Applications for Blanket-licensed and Gateway)	SES-AMD-20190410-00520 <i>et seq.</i>
Earth Stations)	
)	Call Signs E190066, E190129 <i>et seq.</i> &
)	E190161 <i>et seq.</i>

COMMENTS AND PETITION TO CONDITION

Pursuant to Section 25.154(a) of the Commission’s rules,¹ EchoStar Satellite Operating Corporation, and Hughes Network Systems, LLC (collectively, “EchoStar”), Intelsat License LLC (“Intelsat”), and AT&T Services, Inc. (collectively, “GSO Satellite Operators”) submit these comments and petition to condition any grant of the above-captioned application (“Blanket License Application”) of SpaceX Services, Inc. (together with its sister company Space Exploration Holdings, LLC, “SpaceX”) for blanket-licensed earth stations to communicate with its non-geostationary orbit (“NGSO”) fixed satellite service (“FSS”) system in the Ku- and Ka-bands.² Specifically, the GSO Satellite Operators urge the Commission to impose specific license conditions to: (i) affirm SpaceX’s remaining obligation under Section 25.146(c) to receive a favorable or “qualified favorable” International Telecommunication Union (“ITU”)

¹ See 47 C.F.R. § 25.154(a).

² See *Satellite Communications Services re: Satellite Radio Applications Accepted for Filing*, Public Notice, Report No. SES-02170, at 8-9 (June 12, 2019). Pursuant to 47 C.F.R. § 1.1208, the GSO Satellite Operators also submit this filing as a written *ex parte* presentation regarding the above-captioned applications for gateway earth stations (“Gateway Applications” and, together with the Blanket License Application, the “Applications”). See *Satellite Communications Services re: Satellite Radio Applications Accepted for Filing*, Public Notice, Report No. SES-02157, at 1-6 (May 1, 2019).

finding that confirms compliance with applicable equivalent power flux density (“EPFD”) limits;³ and (ii) ensure a timely and sufficient demonstration of EPFD compliance in accordance with established ITU criteria and methodology.⁴

In its Applications, SpaceX affirms its obligation to protect other satellite systems through compliance with applicable EPFD limits under Article 22 of the ITU Radio Regulations.⁵ Indeed, despite obtaining a waiver of Section 25.146(c) of the Commission’s rules requiring receipt of a favorable or “qualified favorable” ITU finding prior to commencing operations,⁶ SpaceX remains obligated under Section 25.146(c)’s requirement to receive a favorable or “qualified favorable” ITU finding and, in the event of an unfavorable finding, adjust its operations to satisfy ITU requirements.⁷ As the Commission has noted, absent a favorable or “qualified favorable” ITU finding, SpaceX’s NGSO operations will be at its own risk.⁸

Unfortunately, in this case, SpaceX’s operations under the Commission’s partial waiver of Section 25.146(c) will be at minimal risk to SpaceX itself, while imposing additional interference risks on incumbent GSO systems. By allowing immediate commencement of operations as well as flexibility to obtain a favorable ITU finding at any time, the Commission’s partial waiver of Section 25.146(c) creates both opportunity and incentive for SpaceX to delay

³ See 47 C.F.R. § 25.146(c).

⁴ As an authorized operator of Ku- and Ka-band geostationary satellite orbit (“GSO”) networks, EchoStar will be directly impacted by SpaceX’s proposed NGSO operations and thus seeks sufficient interference protection from such operations.

⁵ See SpaceX, Blanket License Application, IBFS File No. SES-LIC-20190211-00151, Narrative at 2 (Feb. 11, 2019); SpaceX, Gateway Applications, IBFS File Nos. SES-LIC-20190402-00425 *et seq.*, Narrative at 2 (Apr. 2, 2019).

⁶ See *Space Exploration Holdings, LLC*, Order and Authorization, DA 19-342, ¶¶ 28, 37 (IB Apr. 26, 2019) (“*SpaceX*”).

⁷ See *id.* ¶¶ 28, 32(n).

⁸ See *id.* ¶ 28.

the ITU process indefinitely until a favorable finding of EPFD compliance is assured. In the meantime, as the GSO Satellite Operators have noted, absent a favorable ITU finding, SpaceX's operations offer no assurance of interference protection for GSO systems, thus subjecting GSO systems to interference risks for the indefinite period until SpaceX receives a favorable ITU finding.⁹

These GSO interference concerns remain unabated and, in fact, have intensified in light of SpaceX's proposals to liberalize longstanding ITU criteria and methodology for determining EPFD compliance.¹⁰ SpaceX's proposed changes, if adopted, could facilitate a favorable finding of EPFD compliance for an NGSO system that otherwise may be found noncompliant. Although the GSO Satellite Operators expect that SpaceX's proposed changes will not be adopted, ITU consideration of such changes could indefinitely delay or put into question an ITU finding with respect to SpaceX's system. In the meantime, SpaceX may commence operations under the Commission's partial waiver Section 25.146(c), thus resulting in increased interference risks to incumbent GSO systems until resolution of SpaceX's proposed changes and receipt of a favorable ITU finding.

SpaceX's efforts to seek fundamental changes to longstanding ITU methods for determining EPFD compliance, along with delays in securing a favorable ITU finding, result in

⁹ See Petition to Condition of EchoStar and Intelsat License LLC, IBFS File Nos. SES-LIC-20190402-00425 *et seq.* & SES-AMD-20190410-00520 *et seq.*, at 2-3 (May 31, 2019); Letter from J. Manner, EchoStar, & S. Crandall, Intelsat, IBFS File Nos. SAT-MOD-20181108-00083 *et al.*, at 3 (Apr. 25, 2019).

¹⁰ In the U.S. preparations for ITU Working Party 4A, SpaceX proposed changes to allow NGSO systems to meet the existing EPFD limits more easily, thus reducing the interference protection afforded to GSO systems, including: (i) revising an ITU Recommendation defining the functional description of the ITU's EPFD software to allow an averaging of the results to avoid protecting GSO systems from a worst-case situation; and (ii) revising an ITU Recommendation to change the base GSO earth station antenna patterns used in the EPFD analysis to allow an assumed off-axis discrimination that is substantially higher at key off-axis angles for GSO earth station antennas.

additional interference risks to incumbent GSO systems and are all unanticipated consequences of the Commission’s partial waiver of Section 25.146(c). Absent further Commission action, SpaceX’s ITU tactics will undercut the Commission’s waiver decision to ensure interference protection of GSO systems by preserving SpaceX’s remaining obligation under Section 25.146(c) to receive a favorable or “qualified favorable” ITU finding. Accordingly, the Commission should impose the following condition upon any grant of the Applications, with suggested new language reflected in bold:

Under 47 CFR § 25.146(c), SpaceX must receive a favorable or “qualified favorable” finding in accordance with Resolution 85 (WRC-03) with respect to its compliance with applicable equivalent power flux-density (“EPFD”) limits in Article 22 of the ITU Radio Regulations and, in case of an unfavorable finding, adjust its operation to satisfy the ITU requirements. Any operation of SpaceX’s system prior to the ITU’s finding, are at SpaceX’s own risk. **Additionally, prior to or upon commencement of operation of its system, SpaceX must submit the data used as input to the ITU-approved validation software to demonstrate compliance with applicable EPFD limits.**

Such a condition is similar to one imposed upon grant of authorization for SpaceX’s modified NGSO constellation,¹¹ but includes additional language to help ensure both EPFD compliance in

¹¹ See *SpaceX*, ¶ 32(n).

a timely manner and sufficient interference protection of critical GSO operations under longstanding ITU requirements.

Respectfully submitted,

GSO SATELLITE OPERATORS

/s/ Jennifer A. Manner
Jennifer A. Manner
Senior Vice President, Regulatory Affairs
Kimberly M. Baum
Vice President, Regulatory Affairs
Echostar Satellite Operating Corporation
Hughes Network Systems, LLC

/s/ Susan H. Crandall
Susan H. Crandall
Associate General Counsel

Cynthia J. Grady
Senior Counsel
Intelsat License LLC

/s/ Jessica B. Lyons
Jessica B. Lyons
Counsel to AT&T Services, Inc.

July 12, 2019

CERTIFICATE OF SERVICE

I, Theresa Rollins, hereby certify under penalty of perjury that the foregoing Comments and Petition to Condition was served on July 12, 2019, by depositing a true copy thereof with the United States Postal Service, first class postage pre-paid, addressed to the following:

Patricia Cooper
SpaceX Services, Inc.
1155 F Street, N.W.
Washington, DC 20004

William M. Wiltshire
Harris, Wiltshire & Grannis LLP
1919 M Street, N.W., Suite 800
Washington, DC 20036

Mariah Dodson Shuman
Head of Regulatory Affairs, Americas
WorldVu Satellites Ltd. d/b/a OneWeb
1785 Greensboro Station Place, Tower 3
McLean, VA 22102

Brian Weimer
Sheppard Mullin Richter & Hampton LLP
2099 Pennsylvania Ave., N.W., Suite 100
Washington, DC 20006

/s/ Theresa Rollins

Theresa Rollins