

REQUEST FOR EXTENSION OF SPECIAL TEMPORARY AUTHORITY

Last month, the Commission granted SpaceX Services, Inc. (“SpaceX Services”) Special Temporary Authority (“STA”) to allow communications between its earth stations and satellites that were launched on November 11, 2019 by its sister company, Space Exploration Holdings, LLC (“SpaceX”), into its non-geostationary orbit (“NGSO”) Starlink constellation.¹ SpaceX Services respectfully requests that the Commission extend those STAs for an additional 60 days for the reasons discussed below.

Earlier this year, the Commission authorized SpaceX to relocate 1,584 of the satellites in its Ku/Ka-band NGSO system to an altitude of 550 km.² SpaceX recently continued the process of deploying its system by launching another 60 satellites. Although SpaceX Services has applied for regular authority to operate a number of gateway earth stations, those application remain pending.³ Accordingly, SpaceX Services sought and obtained STAs for its earth stations to communicate with the Starlink satellites during the orbit-raising process and through early operation at their assigned positions.⁴

These operations fall into three categories. First, SpaceX Services would operate a TT&C earth station to conduct telemetry, tracking, and control (“TT&C”) functions during orbit raising⁵ and on-orbit operations while its earth station application is pending. These transmissions would occur in the following frequencies: 12.221 GHz (downlink) and 13.925 GHz (uplink). Second, SpaceX Services would operate Ku-band earth stations to communicate with the payload on each of the Starlink satellites. These operations would take place throughout the 10.7-12.7 GHz (downlink) and 14.0-14.5 GHz (uplink) bands. Third, SpaceX Services would operate five Ka-band gateway earth stations to communicate with the payload on each of the Starlink satellites. These operations would take place throughout the 27.5-29.1 GHz and 29.5-30.0 GHz (uplink) and 17.8-18.6 GHz, 18.8-19.3 GHz, and 19.7-20.2 GHz (downlink) bands.

The Commission has good cause to approve this request to enhance the safety of space. Specifically, the requested STA extension would cover TT&C functions that are essential to commanding the spacecraft and ensuring the health and safety of SpaceX’s nascent constellation. The STA would also allow SpaceX to continue to operate the communications payloads of its

¹ See Public Notice, Rep. No. SES-02215 (rel. Nov. 6, 2019).

² See *Space Exploration Holdings, LLC*, 34 FCC Rcd. 2526 (IB 2019).

³ SpaceX Services currently has applications pending for six Ku-band gateway earth stations (located in North Bend, WA; Conrad, MT; Merrillan, WI; Greenville, PA; Redmond, WA; and Hawthorne, CA); one Ku-band TT&C earth station (located in Brewster, WA); and five Ka-band gateway earth stations (located in Conrad, MT; Loring, ME; Redmond, WA; Greenville, PA; and Merrillan, WI). See Public Notice, Rep. No. SAT-01388 (rel. May 10, 2019); IBFS File Nos. SES-LIC-20190816-01062 and -01063, SES-LIC-20190827-01110, SES-LIC-20190906-01170 and -01171.

⁴ SpaceX obtained a complementary STA for its NGSO constellation. See Public Notice, Rep. No. SAT-01426 (rel. Nov. 8, 2019).

⁵ Although the Commission by rule authorizes TT&C operations for GSO satellites during the orbit-raising phase, it has not yet adopted a similar rule for NGSO systems (though one is currently under consideration). See 47 C.F.R. § 25.282; *Mitigation of Orbital Debris in the New Space Age*, 33 FCC Rcd. 11352, ¶ 70 (2018).

satellites as they are being deployed and in the initial phases of on-orbit functions. This would enable SpaceX to constantly monitor the health of its spacecraft and act quickly in the unlikely event of a performance issue with one of them to identify and correct the problem. By continuing communications even after the satellites have reached their intended orbits, SpaceX will ensure ongoing capabilities and be better able to prepare for accelerated launch of service. Accordingly, extension of the STA will continue serve the public interest by enhancing space safety and promoting the health and safety of SpaceX's NGSO constellation.

SpaceX Services will operate on a non-interference basis. Consistent with SpaceX's authorization, SpaceX Services will observe the applicable equivalent power flux-density ("EPFD") limits set forth in Article 22 and Resolution 76 of the ITU Radio Regulations and the applicable power flux-density ("PFD") limits set forth in the Commission's rules and Article 21 of the ITU Radio Regulations, which the Commission has found sufficient to protect GSO systems and terrestrial systems, respectively, against harmful interference. Nonetheless, in the extremely unlikely event that harmful interference should occur due to transmissions to or from its spacecraft, SpaceX Services will take all reasonable steps to eliminate the interference. Should an issue arise, SpaceX Services can be reached at satellite-operators-pager@spacex.com, which links to the pagers of appropriate technical personnel 24/7.

Accordingly, SpaceX Services requests that the Commission extend the STA for these gateways for up to an additional 60 days.