## REQUEST FOR SPECIAL TEMPORARY AUTHORITY

SpaceX Services, Inc. ("SpaceX Services"), pursuant to Section 25.120 of the Commission's rules, hereby requests Special Temporary Authority ("STA") for 180 days so that twelve earth stations can communicate with satellites launched into the non-geostationary orbit ("NGSO") Starlink constellation licensed to its sister company, Space Exploration Holdings, LLC ("SpaceX") during the orbit-raising and de-orbit phases and early operations of its satellites. Applications for all of those earth stations are currently pending.[1] The relevant call signs are: E190129, E190130, E190131, E190161, E190162, E190163, E190164, E190648, E190649, E190676, E190724, and E190725.

SpaceX has been authorized to launch and operate a constellation of 4,409 NGSO satellites (call sign S2983/S3018) using Ku- and Ka-band spectrum, and to date has launched 180 spacecraft. Pursuant to a series of STAs, earth stations operated by SpaceX Services have been communicating with these spacecraft for over seven months and have received no complaints from any other authorized spectrum user. SpaceX anticipates a regular cadence of further launches throughout 2020, which will require additional authorization for communications with these earth stations.

Accordingly, SpaceX Services requests a 180-day STA to cover three categories of earth station operations. First, SpaceX Services would communicate with SpaceX satellites to conduct telemetry, tracking, and control ("TT&C") functions during orbit-raising (and, if necessary, de-orbit)[2] and on-orbit operations. These transmissions would occur in the 12.15-12.25 GHz band (downlink) and the 13.85-14.0 GHz band (uplink). Second, SpaceX Services would operate six Ku-band earth stations to test the communications payload on each SpaceX satellite. 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 test the communications payload on each SpaceX satellite. 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 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 confirm the operational status of its satellites immediately upon insertion, rather than waiting weeks while the satellites are obit raising to ensure proper

---

[1] 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. SES-02157 (rel. May 1, 2019); Public Notice, Rep. No. SES-02203 (rel. Sep. 25, 2019).

[2] 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 11352, ¶ 70 (2018). Similarly, the Commission's rules authorize TT&C for end-of-life disposal of GSO systems but has no parallel rule for NGSO systems. *See* 47 C.F.R. § 25.283.

functioning. This testing would yield a number of public interest benefits. For instance, SpaceX could act quickly in the unlikely event of a performance issue with one of its spacecraft to identify and correct the problem before the satellite reaches operational orbit. By continuing testing 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. In addition, granting a longer-term STA to cover ongoing launch activities will alleviate the burden on staff resources of issuing short-term STAs in connection with each upcoming SpaceX launch. Accordingly, the STA will serve the public interest by enhancing space safety and promoting the health and safety of SpaceX's NGSO constellation while increasing administrative efficiency.

* * *

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 earth stations, 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.