

SES-STA-20200113-00045

IB2020000084

SpaceX Services, Inc.

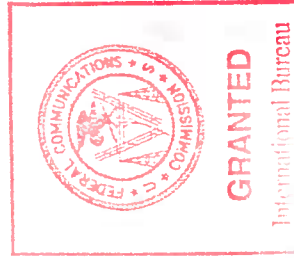
Approved by OMB  
3060-0678

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:  
180-Day Earth Station STA Request

1. Applicant

<b>Name:</b>	SpaceX Services, Inc.	<b>Phone Number:</b>	202-649-2700
<b>DBA Name:</b>		<b>Fax Number:</b>	
<b>Street:</b>	1155 F Street, N.W.	<b>E-Mail:</b>	patricia.cooper@spacex.com
<b>City:</b>	Washington	<b>State:</b>	DC
<b>Country:</b>	USA	<b>Zipcode:</b>	20004
<b>Attention:</b>	Ms Patricia Cooper		



File # SES-STA - 20200113 - 00045  
 SEE CONDITIONS  
 Call Sign A Grant Date 3/3/2020  
 (or other identifier) Term Dates  
 From 3/4/2020 To: 8/31/2020  
 Approved: [Signature]

**Applicant: SpaceX Services, Inc.**  
**IBFS File Number: SES-STA-20200113-00045**  
**Call Sign(s): E190129, E190130, E190131, E190161, E190162, E190163, E190164, E190648, E190649, E190676, E190724, and E190725**

SpaceX Services, Inc. (SpaceX) is granted special temporary authority for 180 days to operate Cobham, Model MK3 series, 1 meter fixed antenna earth stations under call signs E190129, E190130, E190131, E190161, E190162, E190163, E190164, E190648, E190649, E190676, E190724, and E190725 with Starlink constellation satellites launched into the non-geostationary orbit ("NGSO") licensed to its sister company, Space Exploration Holdings, LLC, S2983/S3018 during the orbit-raising and de-orbit phases and early operations of its satellites in the following frequency bands and gateway earth station locations:

(1) 12.15-12.25 GHz (space-to-Earth) and 13.85-14.0 GHz band (Earth-to-space) for satellite telemetry, tracking, and control, from Brewster, WA

(2) 10.7-12.7 GHz (space-to-Earth) and 14.0-14.5 GHz (Earth-to-space) to test the communications payload on each SpaceX satellite from North Bend, WA; Conrad, MT; Merrillan, WI; Greenville, PA; Redmond, WA; and Hawthorne, CA

(3) 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 under the following conditions.

1. All operations under this grant of special temporary authority are on an unprotected and non-harmful interference basis, *i.e.*, SpaceX must not cause harmful interference to, and must not claim protection from interference caused to it by, any other lawfully operating station.
2. In the event of any harmful interference under this grant of special temporary authority, SpaceX must cease operations immediately upon notification of such interference and must inform the Commission, in writing, immediately of such an event.
3. Operations authorized here must comport with the conditions imposed in DA 19-342.<sup>1</sup>
4. Grant of this authorization is without prejudice to any determination that the Commission may make regarding pending or future SpaceX applications.
5. Any action taken or expense incurred as a result of operations pursuant to this STA is solely at SpaceX's risk.

This action is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 CFR § 0.261, and is effective immediately.



File # SES-STA-20200113-00045  
Call Sign SEE Header Grant Date 3/3/2020  
(or other identifier) Term Dates  
From 3/4/2020 To: 8/31/2020  
Approved: Paul E. Hagan

<sup>1</sup> Space Exploration Holdings, LLC, Order and Authorization, DA 19-342 (IB rel. Apr. 26, 2019) (SpaceX Modification Order).

<b>2. Contact</b>	
<b>Name:</b> William M. Wiltshire	<b>Phone Number:</b> 202-730-1350
<b>Company:</b> Harris, Wiltshire & Grannis LLP	<b>Fax Number:</b> 202-730-1301
<b>Street:</b> 1919 M Street, NW Suite 800	<b>E-Mail:</b> wwiltshire@hwglaw.com
<b>City:</b> Washington	<b>State:</b> DC
<b>Country:</b> USA	<b>Zipcode:</b> 20036 -
<b>Attention:</b>	<b>Relationship:</b> Legal Counsel
(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.)	
3. Reference File Number or Submission ID	
4a. Is a fee submitted with this application? <input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114). <input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee <input type="radio"/> Other (please explain):	
4b. Fee Classification CGX - Fixed Satellite Transmit/Receive Earth Station	
5. Type Request <input type="radio"/> Use Prior to Grant <input type="radio"/> Change Station Location <input checked="" type="radio"/> Other	
6. Requested Use Prior Date	
7. City	
8. Latitude (dd mm ss.s h) 0 0 0.0	

9. State	10. Longitude (dd mm ss.s h) 0 0 0.0
11. Please supply any need attachments. Attachment 1: STA Request                      Attachment 2: Attachment 3:	
12. Description. (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) SpaceX Services seeks special temporary authority for communications between twelve earth stations and SpaceX NGSO satellites for 180 days.	
13. By checking Yes, the undersigned certifies that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application"; for these purposes. Yes <input checked="" type="radio"/> No <input type="radio"/>	
14. Name of Person Signing Patricia Cooper	15. Title of Person Signing Vice President, Satellite Government Affairs
WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).	

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**THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104-13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.**

## 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.<sup>1</sup> 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)<sup>2</sup> 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 orbit raising to ensure proper

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<sup>1</sup> 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).

<sup>2</sup> 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.

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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](mailto:satellite-operators-pager@spacex.com), which links to the pagers of appropriate technical personnel 24/7.