



File # SAT-STA-20210205-00017

Call Sign — Grant Date May 28, 2021  
(or other identifier)

Approved by OMB  
3060-0678

Term Dates

From See conditions To: period of 180 days

Date & Time Filed: Feb 5 2021 10:45:06:723PM  
File Number: SAT-STA-20210205-00017  
Callsign:

\*with conditions

Approved by Merissa L. Velez  
Merissa L. Velez  
Chief, Satellite Policy Branch

FEDERAL COMMUNICATIONS COMMISSION  
APPLICATION FOR SPACE STATION SPECIAL TEMPORARY AUTHORITY

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APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:  
Sherpa-FX2-LTE1

I. Applicant

<b>Name:</b>	Spaceflight, Inc.	<b>Phone Number:</b>	866 342-9934
<b>DBA Name:</b>		<b>Fax Number:</b>	
<b>Street:</b>	1505 Westlake Ave. North, Ste 600	<b>E-Mail:</b>	kristina@spaceflight.com
<b>City:</b>	Seattle	<b>State:</b>	WA
<b>Country:</b>	USA	<b>Zipcode:</b>	98109 -
<b>Attention:</b>	Ms Kristina Hloptsidis		

**ATTACHMENT TO GRANT**  
 Spaceflight Inc.  
 IBFS File No. SAT–STA–20210205–00017

<b>IBFS File No(s):</b>	SAT–STA–20210205–00017 <sup>1</sup>	<p><b>GRANTED With Conditions</b></p>  <p><b>International Bureau Satellite Division</b></p>
<b>Licensee/Grantee:</b>	Spaceflight Inc.	
<b>Satellite Names:</b>	Sherpa-FX2 and Sherpa-LTE1	
<b>Orbital Location: (required station-keeping tolerance)</b>	NGSO in a sun-synchronous circular orbit with altitude of 525 km ( $\pm$ 25 km) at an inclination of 97.59°	
<b>Administration:</b>	United States of America	
<b>Nature of Service:</b>	Space Operations	
<b>Scope of Grant:</b>	Authority to: (1) operate a spacecraft to be known as Sherpa-FX2 for a period of less than 24 hours to deploy up to 25 spacecraft; <sup>2</sup> and (2) operate a spacecraft to be known as Sherpa-LTE1, to deploy up to 10 spacecraft during an initial period of six hours or less, <sup>3</sup> and during de-orbit and testing, <sup>4</sup> with operations not to exceed 180 days in total.	
<b>Service Area(s):</b>	Global (to space stations in the Globalstar constellation); Receive from and transmit to earth stations in Tromsø, Norway, Santa Clara, California, and Deadhorse, Alaska; and Transmit to earth stations in Windham, New York, and Fairbanks, Alaska. <sup>5</sup>	
<b>Frequencies<sup>6</sup>:</b>	Space Operations:  <u>Inter-Satellite</u> <sup>7</sup> (Sherpa-FX2 and Sherpa-LTE1 deployment phase): Center frequency 1616.25 MHz, 2.5 MHz bandwidth (transmissions to the Globalstar Satellite System)  <u>Uplink</u> (Sherpa-FX2 and Sherpa-LTE1 deployment phase) <sup>8</sup> : Center frequency 2075 MHz, 300 kHz bandwidth (Earth-to-space)	

<sup>1</sup> The application was placed on public notice on March 12, 2021. *Satellite Policy Branch Information Satellite Space Station Applications Accepted for Filing*, Public Notice, Report No. SAT-01536 (Mar. 12, 2021).

<sup>2</sup> See Spaceflight, Inc., STA Supplement at Exhibit D1, Sherpa-FX2 Manifest (filed Apr. 30, 2021) (STA Supplement). The manifest also lists “TagSat-2”. The “TagSat-2” will remain affixed to the Sherpa-FX2 and radiofrequency operations with the “TagSat-2” have been licensed separately. See Near Space Launch, Inc., Experimental Filing System File No. 0124-EX-CN-2021 (granted May 14, 2021).

<sup>3</sup> See STA Supplement at Exhibit D2, Sherpa-LTE1 Manifest.

<sup>4</sup> Following the deployment of the customer spacecraft, Sherpa-LTE1 will engage in testing of a propulsion system to lower the altitude of the spacecraft from its deployment altitude of approximately 525 km, to approximately 350 km. See STA Supplement, Exhibit B2, Sherpa-LTE1 Orbital Debris Assessment Report, Section 1.

<sup>5</sup> See Spaceflight Inc., Narrative, Attach. 1, Exh. A at 6.

<sup>6</sup> These frequencies are assigned for special temporary authority only, for periods not to exceed those specified in the scope of grant.

<sup>7</sup> The Sherpa-FX2 and Sherpa-LTE1 will also receive signals from the U.S. Global Positioning System (GPS) at 1575.42 MHz (GPS L1 signal). See Letter from Jonathan L. Wiener, Attorney for Spaceflight, Inc. to Marlene H. Dortch, Secretary, FCC (filed May 17, 2021).

<sup>8</sup> Spaceflight states that the sole purpose of operations in this band would be to receive commands from a ground station operated by NearSpace Launch in order to shut off the Sherpa-FX2 and Sherpa-LTE1 radiofrequency transmissions if it became necessary. See Spaceflight Inc., Attach. 1 at 3. No other operations are permitted using this frequency band.

**ATTACHMENT TO GRANT**  
Spaceflight Inc.  
IBFS File No. SAT–STA–20210205–00017

Downlink (Sherpa-LTE1 de-orbit and testing phase):  
Center frequency 400.5 MHz, 40 kHz bandwidth (space-to-Earth)

Uplink (Sherpa-LTE1 de-orbit and testing phase):  
Center frequency: 402.9 MHz, 40 kHz bandwidth (Earth-to-space) (Primary)  
Center frequency: 2075 MHz, 300 kHz bandwidth (Earth-to-space) (Backup)<sup>9</sup>

**Operations under this grant must comport with the legal and technical specifications set forth by the applicant or petitioner and with the Federal Communications Commission’s rules not waived herein. This grant is also subject to the following conditions:**

1. All operations under this grant of special temporary authority must be on an unprotected and non-harmful interference basis, *i.e.*, Spaceflight must not cause harmful interference to, and shall not claim protection from interference caused to it by, any other lawfully operating station.
2. Spaceflight’s request for waiver of Section 25.113(g) of the Commission’s rules, requiring orbital deployment approval and a license to be applied for and granted prior to orbital deployment and operation of a space station, is GRANTED.<sup>10</sup> We find that the special circumstances presented here, including the short operational lifetime of the space stations, and the similarity of the space stations to an upper stage launch vehicle,<sup>11</sup> justify waiver of the rule. Further, waiver of the rule would not undermine the policy objective of the rule. The Commission has described the intent of the rule to be “that the approval process [for space stations] involves a public interest review of proposed space station operation and debris mitigation plans before a space station is launched into orbit.”<sup>12</sup> Consistent with the intent of the rule, we have reviewed the description of space station operations and orbital debris mitigation plan submitted by Spaceflight, and make a finding that granting the requested STA is in the public interest. In light of these specific circumstances, we conclude that waiver would serve the public interest. The rule is waived herein without prejudice to any future applications by Spaceflight, or by any other operators seeking authority to operate space stations designed to deploy satellites.
3. This authorization is limited to operations of the Sherpa-FX2 and Sherpa-LTE1 spacecraft and the radio stations specified in this grant, and does not in any way grant authority for operations or express a view concerning the status of any other radio stations, objects, or spacecraft.
4. Spaceflight must coordinate physical operations of spacecraft with any operator using similar orbits, for the purpose of eliminating collision risk and minimizing operational impacts. The orbital parameters

<sup>9</sup> *Id.*

<sup>10</sup> 47 CFR § 25.113(g).

<sup>11</sup> An upper stage launch vehicle would not be licensed by the Commission, to the extent that the vehicle falls within the authority of the Federal Aviation Administration (FAA). *See Mitigation of Orbital Debris*, Notice of Proposed Rulemaking, 17 FCC Rcd 5586, 5592-93, paras. 14-15 (2002) (citing the Commercial Space Launch Act of 1984, as amended, 49 U.S.C. § 70101 *et seq.*, and the FAA’s implementing regulations, codified at 14 CFR Ch. III, § 400 *et seq.*); *see also Mitigation of Orbital Debris*, Second Report and Order, 19 FCC Rcd 11567, 11611, para. 105 (2004) (noting the Commission’s prior observation that “matters addressed under the Commercial Space Launch Act and its implementing regulations are most appropriately addressed by the FAA”); *Orbital Debris Mitigation in the New Space Age*, Report and Order and Further Notice of Proposed Rulemaking, 35 FCC Rcd 4156, 4192-93, paras. 78-79 (distinguishing between free-flying or separated deployment devices and those deployment devices that may be part of or remain attached to the launch vehicle).

<sup>12</sup> *Comprehensive Review of Licensing and Operating Rules for Satellite Services*, Further Notice of Proposed Rulemaking, 29 FCC Rcd 12116, 12155, para. 133 (2014).

**ATTACHMENT TO GRANT**  
Spaceflight Inc.  
IBFS File No. SAT–STA–20210205–00017

specified in this grant are subject to change based on such coordination.

5. Spaceflight must provide information about the deployments from the Sherpa FX-1 to the United States Air Force's 18<sup>th</sup> Space Control Squadron, to assist in identifying and tracking the space objects being deployed.
6. Upon receipt of a conjunction warning from the 18<sup>th</sup> Space Control Squadron or other source, Spaceflight must review and take all possible steps to assess the collision risk, and mitigate collision risk if necessary. As appropriate, steps to assess and mitigate should include, but are not limited to: contacting the operator of any active spacecraft involved in such warning; sharing ephemeris data and other appropriate operational information with any such operator; and modifying spacecraft attitude and/or operations. In addition, for each spacecraft, Spaceflight must:
  - a. Utilize a deployment sequence that will reduce the probability of recontact.<sup>13</sup>
  - b. Ensure that the risk of recontact specified in its application does not increase as a result of the substitution of non-separating mass models for any of the spacecraft originally planned for deployment.<sup>14</sup>
7. Spaceflight operations at the 400.5 MHz (space-to-Earth) center frequency with a maximum 40 kHz bandwidth shall not exceed the long-term interference criteria specified in Table 2 (Type C) of Recommendation ITU-R RS.1263-2 in order to protect DoC/NOAA radiosondes operations in the United States.
8. Spaceflight operations at the 402.9 MHz (Earth-to-space) center frequency with a maximum 40 kHz bandwidth are authorized on a non-conforming, non-harmful interference and unprotected basis. Spaceflight must immediately terminate non-conforming operations upon notification of harmful interference.
9. Spaceflight operations in the Earth-to-space direction are limited to the 402.9 MHz center frequency. To ensure compatibility with DoC/NOAA radiosonde systems, earth stations transmitting to Spaceflight Sherpa-LTE1 (Earth-to-space) must not transmit radio frequency signals during radiosonde synoptic hour (0:00 UTC and 12:00 UTC; synoptic hour typically indicates a 120-minute period of the radiosonde flight time) and must avoid pointing their uplink antenna's main beam within a 30 degree horizontal sector in the direction of any radiosonde receiver ground station locations that are within 150 km from any earth station(s) Spaceflight operates with in the United States during radiosonde flights.
10. Spaceflight operations pursuant to this authorization must not cause harmful interference to stations operating in the 2025-2110 MHz band in accordance with the U.S. Table of Frequency Allocations, 47 CFR § 2.106, footnote US347.
11. Earth station transmissions to the Sherpa-LTE1 using a 2075 MHz center frequency must be coordinated with the SBE (Society of Broadcast Engineers).
12. Spaceflight must coordinate with Globalstar for operations using a 1616.25 MHz center frequency, 2.5 MHz bandwidth (space-to-space), and operation of this system is contingent upon Globalstar successfully obtaining authorization from the appropriate licensing administration(s).
13. Sherpa-FX2 and Sherpa-LTE1 must be equipped with the ability to turn off or to provide immediate cessation of emissions by telecommand.
14. Upon commencement of operations, Spaceflight must file a notification within one (1) day certifying to the Commission that the space stations have been placed in orbit and indicating whether the operations

<sup>13</sup> See STA Supplement, Exhibit C1, Sherpa-FX2 Long-Term Recontact Probability at 3; STA Supplement, Exhibit C2, Sherpa-LTE1 Long-Term Recontact Probability at 2.

<sup>14</sup> See STA Supplement at 2.

**ATTACHMENT TO GRANT**  
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IBFS File No. SAT–STA–20210205–00017

fully conform to the terms and conditions of this grant. The STA term begins on the date the space stations have been placed in orbit.

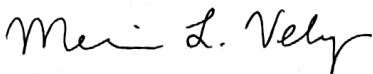
Licensee/grantee is afforded thirty (30) days from the date of release of this action to decline the grant as conditioned. Failure to respond within this period will constitute formal acceptance of the grant as conditioned.

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

Station licenses are subject to the conditions specified in Section 309(h) of the Communications Act of 1934, as amended, 47 U.S.C. § 309(h).

**Action Date:** May 28, 2021

<b>Term Dates</b>	<b>From:</b> see conditions	<b>To:</b> period of 180 days
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<b>Approved:</b>	 Merissa L. Velez Chief, Satellite Policy Branch
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2. Contact	
<b>Name:</b> Jonathan L. Wiener	<b>Phone Number:</b> 703-216-9224
<b>Company:</b> Goldberg, Godles, Wiener & Wright LLP	<b>Fax Number:</b>
<b>Street:</b> 1025 Connecticut Ave, NW Ste 1000	<b>E-Mail:</b> jwiener@g2w2.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 CXW - Space Station (Non-Geostationary)	
5. Type Request	
<input type="radio"/> Change Station Location <input type="radio"/> Extend Expiration Date <input checked="" type="radio"/> Other	
6. Temporary Orbit Location NGSO	7. Requested Extended Expiration Date 2022-01-31 00:00:00.0

8. 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.)

Spaceflight Inc., seeks STA to permit it to deploy and operate two (2) spacecraft, Sherpa-FX2 and Sherpa-LTE1 launching on a SpaceX Falcon 9 for a period not to exceed six (6) months from date of launch and deployment, scheduled to occur in June or July 2021.

9. 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  No

10. Name of Person Signing  
Kristina Hloptsidis

11. Title of Person Signing  
Chief of Regulatory and Risk

12. Please supply any need attachments.

Attachment 1: Attachment 1

Attachment 2:

Attachment 3:

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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