



File # SAT-MOD-20210512-00067

Call Sign S3080 Grant Date June 15, 2021
(or other identifier)

Approved by OMB
3060-0678

Term Dates

From June 15, 2021 To: See conditions

Date & Time Filed: May 12 2021 4:24:48:803PM
File Number: SAT-MOD-20210512-00067

* with conditions

Merissa L. Velez
Merissa L. Velez
Satellite Policy Branch Chief

FCC APPLICATION FOR SPACE AND EARTH STATION:MOD OR AMD – MAIN FORM

FCC Use Only

FCC 312 MAIN FORM FOR OFFICIAL USE ONLY

APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:
Capella SAR Constellation Block 2 (Modification)

1-8. Legal Name of Applicant

Name: Capella Space Corp.

Phone Number:

415-481-4727

**DBA
Name:**

Fax Number:

Street: 438 Shotwell St.

E-Mail:

City: San Francisco

State:

CA

Country: USA

Zipcode:

94110


-

Attention: Mr Daniel J Connors Jr.

ATTACHMENT TO GRANT

Capella Space Corp.

IBFS File No. SAT-MOD-20210512-00067

IBFS File No(s):	SAT-MOD-20210512-00067 ¹	<div>GRANTED With Conditions</div> <div></div> <div>International Bureau Satellite Division</div>
Licensee/Grantee:	Capella Space Corp.	
Call Sign:	S3080	
Satellite Name:	Capella-5, Capella-6	
Orbital Location: (required station- keeping tolerance)	<p>Non-geostationary satellite orbit (NGSO).</p> <p>Capella-5²: 525 km (± 25 km) altitude, at an inclination of 97.5 degrees (± 3 degrees), Right Ascension of Ascending Node (RAAN) 259 degrees (± 60 min)</p> <p>Capella-6: 575 km (± 25 km) altitude, at an inclination of 53 degrees (± 2 degrees), Right Ascension of Ascending Node (RAAN) 106 degrees (± 30 degrees)³</p>	
Administration:	United States of America	
Nature of Service:	Earth Exploration Satellite Service (EESS)	
Scope of Grant:	Modification of authority to construct, deploy, and operate two NGSO satellites ⁴ to (1) permit deployment of one of those satellites, Capella-5, with different orbital parameters than those specified in the license, and (2) to authorize the Capella-5 satellite to receive a signal from a single earth station in 9400-9900 MHz frequency band (Earth-to-space) for a period of up to 30 days following deployment in order to radiometrically calibrate radar measurements. ⁵	

¹ This modification application was placed on public notice on May 14, 2021. *Policy Branch Information Satellite Space Station Applications Accepted for Filing*, Public Notice, Report No. SAT-01552 (May 14, 2021) (Capella-5 Mod). No comments were filed. Capella-5 and Capella-6 were licensed on May 4, 2021. SAT-LOA-20210119-00012 (Capella LOA). The two satellites were originally scheduled to be deployed from the same launch vehicle on May 15, 2021, however, due to a technical issue, deployment of the Capella-5 satellite has been rescheduled to a launch in June 2021. Due to this change, Capella-5's orbital parameters have changed as reflected above, which Capella describes as being identical to the parameters granted for Capella-3. See IBFS File No. SAT-LOA-20200914-00108, granted December 17, 2020. Capella states that no other characteristics of Capella-5 will change including its radiofrequency characteristics (frequencies used, radiated power levels, antenna gain, etc.) or any aspect of its hardware design. See Capella-5 Mod, Narrative at 2.

² See Capella-5 Mod, Narrative at 2.

³ We note that the RAAN initially submitted in the application for Capella-5 and Capella-6 was an estimate. See Capella Space Corp., SAT-LOA-20210119-00012, Waiver Requests at 7. Capella later provided confirmation of an updated RAAN, as well as other orbital parameters, and then updated the information again for Capella-5 as part of this application. See Capella LOA, Letter from Paul Caritj, Counsel for Capella Space Corp., to Marlene H. Dortch, Secretary, FCC, dated April 26, 2021; Capella-5 Mod, Narrative at 2.

⁴ In addition to the Capella-5 and Capella-6 satellites, Capella was previously granted authority to construct, deploy, and operate three NGSO satellites, known as Capella-2, Capella-3, and Capella-4, to operate in the Earth Exploration Satellite Service, conducting synthetic aperture radar (SAR). See IBFS File No. SAT-LOA-20200914-00108 (granted Dec. 17, 2020). See also Experimental Authorization WL2XAD (granted June 26, 2020); Experimental Authorization WJ2XJE (granted Aug. 31, 2018, modification granted Sept. 4, 2020).

⁵ We note that Capella had filed an application requesting special temporary authority (STA) to operate an experimental ground-based system for calibrating the Capella-5 and Capella-6 synthetic aperture radar systems following deployment. See Capella Radar Calibration STA Request, IBFS File No. SAT-STA-20210401-00044. This modification includes grant of the requested authority for the Capella-5 satellite.

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Previous Grant(s):	Authority to construct, deploy, and operate two NGSO satellites, to be known as Capella-5 and Capella-6. SAT-LOA-20210119-00012, granted May 4, 2021.
Service Area(s):	Global, subject to limitations in specific frequency bands
Frequencies:	<p>8025-8400 MHz (center frequency 8212.5 MHz, bandwidth 337.5 megahertz) (space-to-Earth)</p> <p>Synthetic Aperture Radar (SAR): 9300-9900 MHz (center frequency 9600 MHz, bandwidth 600 megahertz)</p> <p>Radar Calibration (Capella-5)⁶: 9400-9900 MHz (Earth-to-space)</p> <p>Telemetry, Tracking and Command frequencies: 8025-8400 MHz (center frequency 8027 MHz; bandwidth 1.4 megahertz) (space-to-Earth) 2025-2110 MHz (center frequency 2036 MHz; bandwidth 1.4 megahertz) (Earth-to-space)</p> <p>Intersatellite Links: 1525.0-1559.0 MHz transmitting (space-to-space) and 1626.5-1660.0 MHz receiving (space-to-space) inter-satellite links with the Inmarsat system, including all the satellites on the Commission's "ISAT" list⁷ (Using frequencies assigned for operations by Inmarsat BGAN terminals).</p>
<p>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:</p> <ol style="list-style-type: none">1. Capella must timely provide the Commission with the information required for Advance Publication, Coordination, and Notification of the frequency assignment(s) for this constellation, including due diligence information, pursuant to Articles 9 and 11 of the ITU Radio Regulations. This authorization may be modified, without prior notice, consistent with the coordination of the frequency assignment(s) with other Administrations. See 47 CFR § 25.111(b). Capella is responsible for all cost-recovery fees associated with the ITU filings. 47 CFR § 25.111(d).2. Capella's request for its application to be processed under the rules adopted for streamlining licensing of small satellites⁸ is GRANTED. The operations requested in this application meet the criteria for streamlined small satellite applicants.⁹ We conclude that Capella's operations are compatible with existing operations in the requested frequency bands, and we find that the type of operations proposed by Capella: short, geographically limited pulses in the SAR band, data downloads and command uplinks involving a limited number of earth stations and occurring only when the satellites are in view of the earth station, as well as	

⁶ See condition 13.

⁷ See Inmarsat, Inc. Request to Streamline Licensing of L-band Mobile-Satellite Service Terminals Using Inmarsat Satellites as Points of Communication, Order, 23 FCC Rcd 15268, 15270, para. 8 (Int'l Bur., Sat. Div. 2008). The current "ISAT" list is reflected in the "Approved Space Station List," <https://www.fcc.gov/approved-space-station-list>.

⁸ *Streamlining Licensing Procedures for Small Satellites*, Report and Order, FCC 19-81, 34 FCC Rcd 13077 (2019) (*Small Satellite Report and Order*).

⁹ See 47 CFR § 25.122; see also Capella LOA, Legal Narrative at 5-6 (specifying compliance with the qualifying criteria in 47 CFR § 25.122(c)).

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operations with the Inmarsat system effectively as one user terminal among a much larger user community—will not materially constrain future space station entrants from using the requested frequency bands.¹⁰

3. Capella's request for a waiver of the U.S. Table of Frequency Allocations, 47 CFR § 2.106, to receive inter-satellite signals from the Inmarsat satellite system in the 1525.0-1559.0 MHz frequency band is GRANTED, on an unprotected basis. Although the allocations in this frequency band do not include a directional indicator for space-to-space communications, reception by the Capella satellites of these frequencies will not in any way alter the interference environment, as the received signal will be indistinguishable in its technical characteristics from signals transmitted in the allocated space-to-Earth direction.
4. Capella's request for a waiver of the Table of Frequency Allocations, 47 CFR § 2.106, to transmit inter-satellite signals to the Inmarsat satellite system in the 1626.5-1660.0 MHz frequency band on an unprotected, non-interference basis, is GRANTED. The allocation for the Mobile-Satellite Service in which the Inmarsat system operates and that encompasses these bands does not include a space-to-space directional indicator. The signals transmitted from Capella's system will be used on a limited basis for data requiring transmission prior to available downlink opportunities directly to earth stations.¹¹ Capella states that these transmissions will only occur on frequencies that Inmarsat assigns to the spaceborne Inmarsat BGAN terminal onboard the Capella satellites, and that Inmarsat will assign channels to Capella consistent with its coordination agreements with other operators in the band, ensuring that no other licensee will be transmitting at the same time and on the same frequency as Capella space-to-space transmissions, and preventing harmful interference.¹² Capella indicates that the primary anticipated use of this "uplink" is to acknowledge receipt of tasking requests and other data delivered via the satellite-to-satellite "downlink" (i.e., transmissions from Inmarsat satellites).¹³ In addition, it states that these space-to-space uplink capabilities will be used to provide critical health and status telemetry periodically, when no ground station is available. Capella states that the communication protocol this link uses is designed to transmit the minimum amount of information

¹⁰ See 47 CFR § 25.122(c)(9), (d)(3). Capella states that its operations in the 9300-9600 bands for SAR imaging generate brief pulses using a very high directivity antenna—thus minimizing both the active time as well as the affected areas on the ground. Capella LOA, Legal Narrative at 10; Technical Attachment at 19. With regard to the 8025-8400 MHz band, Capella states that it will coordinate operations with federal agencies, including authorized bandwidth, and that it will comply with both ITU PFD limits and Space Frequency Coordination Group PFD recommendations, designed to facilitate successful coordination of EESS frequencies, thereby promoting efficient use of spectrum. Capella LOA, Legal Narrative at 7-8, Technical Attachment at 15, 21. Capella states that its uplink operations in the 2025-2110 MHz band shall not cause harmful interference to Federal and non-Federal stations operating in accordance with the Table of Frequency Allocations, and that a coordination agreement has been submitted to NASA and other federal agencies to ensure that Capella uplinks do not interfere with critical systems of these agencies. Capella LOA, Legal Narrative at 8-9. Capella's operations in the 2025-2110 MHz band are limited to command uplinks from a specified list of earth stations. See Appendix A. Capella states that its proposed use of the 1626.5-1660.0 MHz bands is on a non-conforming basis and that transmissions will occur only on frequencies that Inmarsat assigns to the spaceborne Inmarsat BGAN terminal onboard the Capella satellite, consistent with its coordination agreements with other operators in the band, thus ensuring that no other licensee will be transmitting at the same time and on the same frequency as a Capella space-to-space transmission. Capella LOA, Technical Attachment at 3, 20. Capella further states that its transmissions in the 1626.5-1660.0 MHz band will be extremely brief and infrequent, to acknowledge receipt of tasking requests and other data received from the Inmarsat satellites, and to transmit critical health and status telemetry periodically, when no ground station is available. Capella LOA, Legal Narrative at 4; Technical Attachment at 3; Waiver Requests at 4. In the 1525-1559 MHz band, signals transmitted by Inmarsat satellites will be with the same technical parameters as Inmarsat would use to communicate with its authorized MSS terminals on the earth's surface. Capella LOA, Technical Attachment at 20; Waiver Requests at 3.

¹¹ See Capella LOA, Legal Narrative at 4; Technical Attachment at 3; Waiver Requests at 2.

¹² Capella LOA, Technical Attachment at 20; Waiver Requests at 3-4.

¹³ Capella LOA, Legal Narrative at 11; Waiver Requests at 4. This "downlink" is in the 1525.0-1559.0 MHz frequency band, as indicated above.

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necessary and only actively transmit when there is information to send.¹⁴ Thus, Capella anticipates that any space-to-space transmissions from the Capella satellite will be extremely brief and infrequent, preventing any harmful interference to other operators even absent the time- and frequency-based coordination built into Inmarsat's channel-assignment process.¹⁵

5. Capella's request for a waiver of the section 25.202(g)(1), 47 CFR § 25.202(g)(1), to conduct its TT&C uplink transmissions at 2035-2037 MHz, is GRANTED. Section 25.202(g)(1) anticipates that satellite systems will conduct telemetry, tracking and command (TT&C) operations using spectrum at the edge of or within their assigned bands, however, Capella has no assigned uplink band for customer traffic, and therefore no band edge at which to conduct TT&C, thus a waiver of section 25.202(g)(1) is warranted.
6. Capella's request for a waiver of limitations in Schedule S,¹⁶ is GRANTED. As required by the Commission's rules, Capella submitted a completed Schedule S for its application, which contains certain technical information in a prescribed form. Capella found that it could not accurately describe its system in certain respects due to limitations in Schedule S itself. Capella cites six limitations in Schedule S that affected how the Schedule S was completed: (1) the inability to enter "not applicable" for Section 25.114(c)(4)(v); (2) the need to defer submission of the final right ascension of the ascending node (RAAN) parameter until it is known with certainty; (3) the inapplicability of the field "Polarization Alignment Relative to the Equatorial Plane" for antennas with linear polarizations such as Capella's SAR emitter, even though Capella's system is an NGSO, and thus will not operate with a consistent alignment relative to the equatorial plane; (4) the inability to reflect the switchable polarization of Capella's payload downlink beam at 8043.75–8381.25 MHz; (5) the inability to indicate that a specific channel plan for Capella's space-to-space links will operate on channels, and with bandwidths, to be specified by Inmarsat; (5) the inability to reflect that the PFD and EIRP density of Capella's space-to-space transmissions will vary depending on bandwidths specified by Inmarsat; (6) the inability to permit a two-digit value for the field "Active Service Arc End Angle," making it impossible to properly represent full-arc coverage (i.e. 0-360 degrees). To the extent necessary, Capella requests that the Commission waive these aspects of Schedule S in light of these limitations. In view of the fact that Capella has implemented a workaround for each of these limitations to allow entry of the required information, with the exception of the final RAAN parameter, which Capella states that it will provide closer to the launch date once it is known with certainty,¹⁷ we find that a waiver of the requirement to complete certain aspects or fields of Schedule S is warranted.
7. 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. See 47 CFR § 2.106, footnote US347.
8. Transmissions in the 2025-2110 and 8025-8400 MHz frequency bands may only be made to/from Federal earth stations or earth stations coordinated with the National Aeronautics and Space Administration (NASA), the Air Force Spectrum Management Office (AFSMO), DOC/NOAA, and the Department of the Navy (DON). A list of coordinated non-Federal earth stations is attached in Appendix A. Capella shall provide the FCC with an updated list of coordinated non-Federal earth stations within ten business days following any changes to this list.

¹⁴ Capella LOA, Waiver Requests at 2. Capella states that, among other things, use of inter-satellite links with its SAR system will enable relay of customer observation requests immediately, and that such rapid tasking capabilities will support rapid imaging for humanitarian disaster relief efforts and as well as reactive imaging capabilities for governmental and other users. *Id.*

¹⁵ *Id.* at 4.

¹⁶ Capella LOA, Waiver Requests at 6-9.

¹⁷ See n.3, *supra*.

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9. Transmissions in the 2025-2110 MHz frequency band are only authorized in the center frequency 2036 MHz (Earth-to-space) with a bandwidth of 1.4 MHz and shall not exceed an equivalent isotropic radiated power (e.i.r.p.) of 41 dBW.
10. Operations in the 8025-8400 MHz band shall comply with the signed Coordination Agreement between Capella Space, NASA, and other Federal Agencies for Satellite Missions Operated in the 8025-8400 MHz band.
11. Power flux-density limits from operation in the 8025-8400 MHz band must not exceed the limits in No. 22.5 and Table 21-4 of the ITU Radio Regulations, must meet the limits/protection criteria in Recommendation ITU-R SA.1157-1, and must follow the guidelines in Recommendation ITU-R SA. 1810.
12. EESS (active) operations in the 9500-9800 MHz (space-to-Earth) frequency band are allocated on a secondary basis in the U.S. Table of Allocations, 47 CFR § 2.106. Accordingly, Capella must accept interference from and not cause interference to any services, including Federal operations, operating on a primary basis in the 9500-9800 MHz band. Capella's systems are designed to avoid any harmful interference with other satellite systems—including other EESS systems—and protected terrestrial systems.¹⁸ Additionally, due to the on-demand nature of Capella's service, its payload and sensing transmissions will occur infrequently and with low PFD on the ground, further minimizing the risk of interference while these systems are active. The Capella system will only transmit for brief periods, and over a limited geography at a given moment in time. Transmissions from the Capella SAR system thus will have no material effect on terrestrial radar systems.¹⁹
13. Reception in the 9400-9900 MHz (Earth-to-space) frequency band is authorized under this grant, for purposes of radar calibration with the Capella-5 space station, from a single earth station for a period not to exceed 30 days starting from the date that the Capella-5 space station has been successfully placed into orbit. We grant Capella's request for waiver of the U.S. Table of Frequency Allocations, 47 CFR § 2.106, in connection with these operations. These operations are authorized on an unprotected and non-harmful interference basis, i.e., Capella must not cause harmful interference to, and must not claim protection from interference caused to it by any other lawfully operating station. In the event of any harmful interference, Capella must cease operations immediately upon notification of such interference and must inform the Commission, in writing, immediately of such an event.
14. Capella 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 specified in this grant are subject to change based on such coordination.
15. Upon receipt of a conjunction warning from the 18th Space Control Squadron or other source, Capella 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.
16. Unless extended by the Commission for good cause shown, this authorization will become null and void in the event the Capella-5 space station²⁰ is not constructed and launched in accordance with the schedule set forth in section 25.164 of the Commission's rules, as follows:
 - a. In the event that the Capella-5 space station has not been launched, placed into the assigned orbit,

¹⁸ See Capella LOA, Technical Attachment at 4-5.

¹⁹ See *id.* at 18-20.

²⁰ This condition has been modified from the original license to reflect that the Capella-6 space station has been launched and is operational.

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and begun operations in accordance with this grant by **May 4, 2022**,²¹ Capella must post a surety bond in satisfaction of 47 CFR §§ 25.165(a)(1) & (b) no later than **June 3, 2022**, thereafter maintain on file a surety bond requiring payment in the event of a default in an amount, at minimum, determined according to the formula set forth in 47 CFR § 25.165(a)(1); and

- b. Capella must launch Capella-5, place it into the assigned orbit, and operate the space station in accordance with this grant no later than **May 4, 2027**. 47 CFR § 25.164(b).

17. The license term is six years and began on 3 a.m. EST on the date that Capella certified to the Commission that the Capella-6-space station was successfully placed into orbit and its operations fully conform to the terms and conditions of this authorization.²² Capella must also file a certification within five business days of placing the Capella-5 space station into operation.

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:	June 15, 2021
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Term Dates	From: June 15, 2021	To: see conditions
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Approved:



Merissa L. Velez
Chief, Satellite Policy Branch

²¹ We note that since this application is being processed under the rules adopted for streamlined licensing of small satellites adopted in FCC 19-81, which are now effective, the requirement for Capella to post a surety bond in accordance with 47 CFR § 25.165(a)(1) & (b) is deferred by one year following the date of grant in accordance with the grace period adopted in FCC 19-81. See 47 CFR 25.165(a); *Small Satellite Report and Order*, 34 FCC Rcd at 13112-13, paras. 93-97.

²² See Capella LOA, Certification of Launch and Operation of Capella-6 Satellite (filed May 20, 2021).

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Appendix A

Earth Station 1. Svalbard, Norway

Earth Station 2. Punta Arenas, Chile

Earth Station 3. Punta Arenas, Chile

Earth Station 4. Troll, Antarctica

Earth Station 5. Boardman, OR

Earth Station 6. Kileville, OH

Earth Station 7. Kapolei, HI

Earth Station 8. Hartebeesthoek, South Africa

Earth Station 9. Awarua, New Zealand

Earth Station 10. Nemea, Greece

Earth Station 11. Cape Town, South Africa

Earth Station 12. Dublin, Ireland

Earth Station 13. Vasteras, Sweden

Earth Station 14. Manama, Bahrain

Earth Station 15. Sydney, Australia

Earth Station 16. Seoul, South Korea

9–16. Name of Contact Representative

Name:	Paul Caritj	Phone Number:	202–730–1319
Company:	Harris, Wiltshire & Grannis, LLP	Fax Number:	
Street:	1919 M St NW	E–Mail:	pcaritj@hwglaw.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20912–
Attention:		Relationship:	Legal Counsel

CLASSIFICATION OF FILING

17. Choose the button next to the classification that applies to this filing for both questions a. and b. Choose only one for 17a and only one for 17b.

- ☐ a1. Earth Station
- ☒ a2. Space Station

- (N/A) b1. Application for License of New Station
- (N/A) b2. Application for Registration of New Domestic Receive–Only Station
- ☐ b3. Amendment to a Pending Application
- ☒ b4. Modification of License or Registration
- b5. Assignment of License or Registration
- b6. Transfer of Control of License or Registration
- ☐ b7. Notification of Minor Modification
- (N/A) b8. Application for License of New Receive–Only Station Using Non–U.S. Licensed Satellite
- (N/A) b9. Letter of Intent to Use Non–U.S. Licensed Satellite to Provide Service in the United States
- (N/A) b10. Other (Please specify)
- (N/A) b11. Application for Earth Station to Access a Non–U.S. satellite Not Currently Authorized to Provide the Proposed Service in the Proposed Frequencies in the United States
- (N/A) b12. Application for Database Entry
- ☐ b13. Amendment to a Pending Database Entry Application
- ☐ b14. Modification of Database Entry

<p>17c. Is a fee submitted with this application?</p> <p><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).</p> <p><input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee</p> <p><input type="radio"/> Other(please explain):</p>	
<p>17d.</p> <p>Fee Classification CGW – Space Station Modification(Non–Geostationary)</p>	
<p>18. If this filing is in reference to an existing station, enter:</p> <p>(a) Call sign of station: S3080</p>	<p>19. If this filing is an amendment to a pending application enter both fields, if this filing is a modification please enter only the file number:</p> <p>(a) Date pending application was filed: (b) File number:</p> <p> SATLOA2021011900012</p>

TYPE OF SERVICE

<p>20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s): Select all that apply:</p> <p> <input type="checkbox"/> a. Fixed Satellite <input type="checkbox"/> b. Mobile Satellite <input type="checkbox"/> c. Radiodetermination Satellite <input checked="" type="checkbox"/> d. Earth Exploration Satellite <input type="checkbox"/> e. Direct to Home Fixed Satellite <input type="checkbox"/> f. Digital Audio Radio Service <input type="checkbox"/> g. Other (please specify) </p>		
<p>21. STATUS: Choose the button next to the applicable status. Choose only one.</p> <p> <input checked="" type="radio"/> Common Carrier <input checked="" type="radio"/> Non-Common Carrier </p>	<p>22. If earth station applicant, check all that apply.</p> <p> <input checked="" type="checkbox"/> Using U.S. licensed satellites <input type="checkbox"/> Using Non-U.S. licensed satellites </p>	
<p>23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:</p> <p> <input checked="" type="radio"/> Connected to a Public Switched Network <input checked="" type="radio"/> Not connected to a Public Switched Network <input checked="" type="radio"/> N/A </p>		
<p>24. FREQUENCY BAND(S): Place an 'X' in the box(es) next to all applicable frequency band(s).</p> <p> <input type="checkbox"/> a. C-Band (4/6 GHz) <input type="checkbox"/> b. Ku-Band (12/14 GHz) <input checked="" type="checkbox"/> c. Other (Please specify upper and lower frequencies in MHz.) Frequency Lower: Frequency Upper: (Please specify additional frequencies in an attachment) </p>		

TYPE OF STATION

25. CLASS OF STATION: Choose the button next to the class of station that applies. Choose only one.

- ☐ a. Fixed Earth Station
- ☐ b. Temporary–Fixed Earth Station
- ☐ c. 12/14 GHz VSAT Network
- ☐ d. Mobile Earth Station
- ☐ e. Geostationary Space Station
- ☒ f. Non–Geostationary Space Station
- ☐ g. Other (please specify)

26. TYPE OF EARTH STATION FACILITY:

- ☐ Transmit/Receive ☐ Transmit–Only ☐ Receive–Only ☒ N/A

"For Space Station applications, select N/A."

PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an 'X' in the box(es) next to all that apply.)

- ☐ a --- authorization to add new emission designator and related service
- ☐ b --- authorization to change emission designator and related service
- ☐ c --- authorization to increase EIRP and EIRP density
- ☐ d --- authorization to replace antenna
- ☐ e --- authorization to add antenna
- ☐ f --- authorization to relocate fixed station
- ☐ g --- authorization to change frequency(ies)
- ☐ h --- authorization to add frequency
- ☐ i --- authorization to add Points of Communication (satellites & countries)
- ☐ j --- authorization to change Points of Communication (satellites & countries)
- ☐ k --- authorization for facilities for which environmental assessment and radiation hazard reporting is required
- ☒ l --- authorization to change orbit location
- ☐ m --- authorization to perform fleet management
- ☐ n --- authorization to extend milestones
- ☐ o --- Other (Please specify)

ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307? If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. 1.1308 and 1.1311, as an exhibit to this application. A Radiation Hazard Study must accompany all applications for new transmitting facilities, major modifications, or major amendments.

☐ Yes ☒ No

ALIEN OWNERSHIP Earth station applicants not proposing to provide broadcast, common carrier, aeronautical en route or aeronautical fixed radio station services are not required to respond to Items 30–34.

29. Is the applicant a foreign government or the representative of any foreign government?

☐ Yes ☒ No

30. Is the applicant an alien or the representative of an alien?

☐ Yes ☒ No ☐ N/A

31. Is the applicant a corporation organized under the laws of any foreign government?

☐ Yes ☒ No ☐ N/A

32. Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?

☐ Yes ☒ No ☐ N/A

33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?

☐ Yes ☒ No ☐ N/A

34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit an identification of the aliens or foreign entities, their nationality, their relationship to the applicant, and the percentage of stock they own or vote.

Ownership

BASIC QUALIFICATIONS

35. Does the Applicant request any waivers or exemptions from any of the Commission's Rules?
If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.

☒ Yes ☐ No

36. Has the applicant or any party to this application or amendment had any FCC station authorization or license revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission? If Yes, attach as an exhibit, an explanation of circumstances.

☐ Yes ☒ No

<p>37. Has the applicant, or any party to this application or amendment, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal court? If Yes, attach as an exhibit, an explanation of circumstances.</p>	<p><input type="radio"/> Yes <input checked="" type="radio"/> No</p>
<p>38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attempting unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement or any other means or unfair methods of competition? If Yes, attach as an exhibit, an explanation of circumstances</p>	<p><input type="radio"/> Yes <input checked="" type="radio"/> No</p>
<p>39. Is the applicant, or any person directly or indirectly controlling the applicant, currently a party in any pending matter referred to in the preceding two items? If yes, attach as an exhibit, an explanation of the circumstances.</p>	<p><input type="radio"/> Yes <input checked="" type="radio"/> No</p>
<p>40. If the applicant is a corporation and is applying for a space station license, attach as an exhibit the names, address, and citizenship of those stockholders owning a record and/or voting 10 percent or more of the Filer's voting stock and the percentages so held. In the case of fiduciary control, indicate the beneficiary(ies) or class of beneficiaries. Also list the names and addresses of the officers and directors of the Filer.</p>	

41. 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

42a. Does the applicant intend to use a non-U.S. licensed satellite to provide service in the United States? If Yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. 25.137, as appropriate. If No, proceed to question 43.

☐ Yes ☒ No

42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station?United States

43. Description. (Summarize the nature of the application and the services to be provided). (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

Modification of authorization to deploy and operate earth exploration satellites to provide synthetic aperture radar imagery of the earth

43a. Geographic Service Rule Certification

By selecting A, the undersigned certifies that the applicant is not subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25.

☒ A

By selecting B, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will comply with such requirements.

☐ B

By selecting C, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will not comply with such requirements because it is not feasible as a technical matter to do so, or that, while technically feasible, such services would require so many compromises in satellite design and operation as to make it economically unreasonable. A narrative description and technical analysis demonstrating this claim are attached.

☐ C

ODAR Report

CERTIFICATION

The Applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. The applicant certifies that grant of this application would not cause the applicant to be in violation of the spectrum aggregation limit in 47 CFR Part 20. All statements made in exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that all statements made in this application and in all attached exhibits are true, complete and correct to the best of his or her knowledge and belief, and are made in good faith.

44. Applicant is a (an): (Choose the button next to applicable response.)

- ☐ Individual
- ☐ Unincorporated Association
- ☐ Partnership
- ☒ Corporation
- ☐ Governmental Entity
- ☐ Other (please specify)

45. Name of Person Signing
Daniel J. Connors Jr.

46. Title of Person Signing
General Counsel

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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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