

S2110 SAT-MOD-20171030-00146 IB2017003101
Iridium Constellation LLC



File # SAT-MOD-20171030-00146 *corrected on 3/22/18

Call Sign S2110 Grant Date 01/18/18
(or other identifier)

From 01/18/18 Term Dates see conditions
To: conditions

Approved by OMB
3060-0678

Approved: Stephen J. Duall
Stephen J. Duall
Chief, Satellite Policy Branch

Date & Time Filed: Oct 30 2017 4:38:25:863PM
File Number: SAT-MOD-20171030-00146

*with conditions

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:
Iridium Block 1 MOD

1-8. Legal Name of Applicant

Name:	Iridium Constellation LLC	Phone Number:	703-287-7518
DBA Name:		Fax Number:	
Street:	1750 Tysons Boulevard	E-Mail:	maureen.mclaughlin@iridium.com
	Suite 1400		
City:	McLean	State:	VA
Country:	USA	Zipcode:	22102 -
Attention:	Ms Maureen C McLaughlin		

ATTACHMENT TO GRANT
Iridium Constellation LLC
IBFS File No. SAT-MOD-20171030-00146
* CORRECTED*

IBFS File No(s):	SAT-MOD-20171030-00146	<p>GRANTED – With Conditions</p>  <p>International Bureau Satellite Division</p>
Licensee/Grantee:	Iridium Constellation LLC (Iridium)	
Call Sign:	S2110	
Satellite Name:	Iridium 1 st and 2 nd generation constellations	
Orbital Location: (required station-keeping tolerance)	Service constellation (66 satellites): - 778 km circular, 86.4° inclination Spares (18 first-gen. and 15 second-gen. satellites): - 763 km circular, 86.4° inclination	
Administration:	United States of America	
Nature of Service:	- Aeronautical mobile-satellite (route) service - Fixed-satellite service - Inter-satellite service - Mobile-satellite service	
Scope of Grant:	- Extension of the license term for first-generation satellites to July 31, 2019. - Authority for telemetry, tracking, and command operations to transit and maintain up to 18 first-generation satellites as in-orbit spares, and to maneuver and activate such spares as necessary.	
Previous Grant(s):	- DA 95-131 (original license) - DA 96-1789 (modification and technical waivers) - FCC 96-279 (modification of inter-satellite frequencies) - DA 99-1254 (authorization of additional first-generation in-orbit spares) - DA 02-307 (license assignment and approval of first-generation orbital debris plan) - DA 04-2869 (addition of service frequencies) - FCC 08-248 (addition of service frequencies) - DA 13-141 (addition of aeronautical mobile-satellite (R) service) - DA 14-1118 (modification of first-generation orbital debris plan) - File No. SAT-MOD-20120813-00128 (co-located satellites modification) - File No. SAT-MOD-20101001-00207 (first-generation license extension) - DA 16-875 (second-generation license)	
Service Area(s):	Global	
Frequencies:	<u>First-Generation and Second-Generation Space Stations</u> 1617.775-1618.725 MHz (space-to-Earth and Earth-to-space) for mobile-satellite service on a shared basis with the Globalstar system. 1618.725-1626.5 MHz (space-to-Earth and Earth-to-space) for: - Mobile-satellite service on an exclusive basis; and - Aeronautical mobile-satellite (route) service in oceanic, polar, and remote regions. 19.4-19.6 GHz (space-to-Earth) for feeder downlinks, telemetry, and tracking. 23.18-23.38 GHz for inter-satellite links. 29.1-29.3 GHz (Earth-to-space) for feeder uplinks, tracking, and command. <u>Second-Generation Space Stations Only</u> 156.0125-162.0375 MHz (Earth-to-space) for reception of the following types of messages from maritime vessels:	

ATTACHMENT TO GRANT
Iridium Constellation LLC
IBFS File No. SAT-MOD-20171030-00146
* CORRECTED*

- Automatic Identification System;
- Application Specific Messages;
- Digital Selective Calling; and
- Maritime distress, urgency and safety calling.

1087.7-1092.3 MHz (Earth-to-space) for reception of Automatic Dependent Surveillance-Broadcast transmissions from aircraft.

Unless otherwise specified herein, operations under this grant must comport with the legal and technical specifications set forth by the applicant or petitioner and with Federal Communication Commission's rules not waived herein. This grant is also subject to the following conditions:

Conditions on Both First-Generation and Second-Generation Authorizations

1. *Aeronautical mobile-satellite (route) service (AMS(R)S)*: Iridium may provide AMS(R)S in oceanic, polar, and remote regions, subject to the following conditions:
 - a. AMS(R)S operations must be confined to the 1618.725-1626.5 MHz frequency band.
 - b. AMS(R)S operations must comply with MSS coordination agreements with other MSS operators, the results of the agreement seeking process under ITU Radio Regulation 9.21, and coordination agreements with operators of radio astronomy observatories.
 - c. Any additional protection desired for AMS(R)S operations from interference from previously authorized MSS operations in adjacent frequency bands, beyond that afforded by existing arrangements, must be sought through new or modified inter-operator arrangements.
 - d. In connection with the provision of AMS(R)S to aircraft of any particular country of registry or in any particular airspace, Iridium is obliged to comply with the applicable laws, regulation, rules and licensing procedures of that country and/or the relevant airspace administrator.
 - e. Iridium must limit AMS(R)S operations outside the United States to the oceanic regions, the Antarctic land mass and adjacent waters, and the remote areas of those territories for which it has successfully completed the agreement seeking process pursuant to ITU Radio Regulation 5.367.
 - f. Iridium must give priority to AMS(R)S and 911 safety messages, by real-time pre-emption if necessary, over all Iridium message traffic that is not considered safety-related pursuant to a recognized safety service.
2. *Executive Branch Agreement*: Iridium's authorizations are conditioned upon compliance by Iridium Holdings LLC, Iridium Carrier Holdings LLC, and GHL Acquisition Corp., and their respective subsidiaries and affiliates, with the commitments and undertakings set forth in the Executive Branch Agreement dated August 17, 2001, included as Appendix A in DA 02-307.

Conditions on Second-Generation Authorization Only

1. *ITU compliance*. Operations of the Iridium second-generation satellite constellation must be in accordance with the ITU Radio Regulations.
2. *156.0125-162.0375 MHz and 1087.7-1092.3 MHz*. Iridium may claim protection for reception in the

ATTACHMENT TO GRANT
Iridium Constellation LLC
IBFS File No. SAT-MOD-2017-1030-00146
*** CORRECTED***

156.0125-162.0375 MHz or 1087.7-1092.3 MHz bands only to the extent permitted under the U.S. Table of Frequency Allocations for domestic operations or the ITU Radio Regulations for international operations, as of the time of operation. Operations in the 156.0125-162.0375 MHz and 1087.7-1092.3 MHz bands must be in accordance with any Commission rulemakings after August 1, 2016, that implement any new domestic allocations or service rules for these bands.

3. *Protection of radio astronomy.* Iridium must implement its plan for the protection of radio astronomy observations in the 1610.6-1613.8 MHz band set forth in its letter of March 28, 2016, attached to DA 16-875, with respect to both U.S. and international observations. In this respect, Iridium shall not produce out-of-band emissions that cause detrimental interference to radio astronomy observations (see Section III of Article 29 of the ITU Radio Regulations) and must comply with No. 5.372 of the ITU Radio Regulations and with 47 CFR § 25.213.

Dismissal of Waiver Request

Iridium's request for waiver of 47 CFR § 25.117(c) to the extent necessary to omit Schedule S data from its modification application IS DISMISSED AS MOOT. Iridium has affirmed that the technical information on file for the Iridium first-generation satellites remains unchanged by its modification application. Narrative at 9. Therefore, a new Schedule S is not necessary.


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:	January 18, 2018*	
Term Dates	From: January 18, 2018	To: July 31, 2019 (1 st generation satellites) February 23, 2032 (2 nd generation satellites)

Approved:


 Stephen J. Duall
 Chief, Satellite Policy Branch

* CORRECTION TO SCOPE OF GRANT MADE MARCH 22, 2018

9-16. Name of Contact Representative

Name:	Jennifer Hindin	Phone Number:	2027194975
Company:	Wiley Rein LLP	Fax Number:	
Street:	1776 K St NW	E-Mail:	jhindin@wileyrein.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20006-
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

17c. Is a fee submitted with this application?

- If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).
 Governmental Entity Noncommercial educational licensee
 Other (please explain):

17d.

Fee Classification CGW – Space Station Modification (Non-Geostationary)

18. If this filing is in reference to an existing station, enter:

(a) Call sign of station:
S2110

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:

(a) Date pending application was filed: (b) File number:
SATMOD2013122700148

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</p> <p><input checked="" type="checkbox"/> b. Mobile Satellite</p> <p><input type="checkbox"/> c. Radiodetermination Satellite</p> <p><input type="checkbox"/> d. Earth Exploration Satellite</p> <p><input type="checkbox"/> e. Direct to Home Fixed Satellite</p> <p><input type="checkbox"/> f. Digital Audio Radio Service</p> <p><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 type="checkbox"/> Using U.S. licensed satellites</p> <p><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 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)</p> <p><input checked="" type="checkbox"/> c. Other (Please specify upper and lower frequencies in MHz.)</p> <p>Frequency Lower: 1616 Frequency Upper: 1626.5 (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?	<input type="radio"/> Yes <input checked="" type="radio"/> No
30. Is the applicant an alien or the representative of an alien?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A
31. Is the applicant a corporation organized under the laws of any foreign government?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> 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?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> 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.

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

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.

Yes No

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

Yes No

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.

Yes No

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.

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?

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.)

Iridium Constellation LLC hereby seeks to modify Call Sign S2110 to (1) extend the license term for its first generation (Block 1) satellites until July 31, 2019; (2) continue to use a storage orbit for Block 1 satellites to serve as spares; and (3) maneuver satellites within the constellation

Narrative Exhibit

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

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
Maureen C. McLaughlin

→

46. Title of Person Signing
Vice President Public Policy

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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