

S2110 SAT-MOD-20121207-00211 IB2012002815
Iridium Constellation LLC
Iridium



File # SAT-MOD-20121207-00211

Call Sign S2110 Grant Date 01/30/14
(or other identifier)

Term Dates
From 01/30/14 To: _____

Approved by OMB
3060-0678

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

Date & Time Filed: Dec 7 2012 3:18:21:173PM
File Number: SAT-MOD-20121207-00211

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 MOD application SV023 parking orbit

1-8. Legal Name of Applicant

Name:	Iridium Constellation LLC	Phone Number:	703-287-7400
DBA Name:		Fax Number:	703-287-7450
Street:	1750 Tysons Boulevard	E-Mail:	donna.bethea-murphy@iridium.com
	Suite 1400		
City:	McLean	State:	VA
Country:	USA	Zipcode:	22102 -
Attention:	Donna Bethea-Murphy		

9-16. Name of Contact Representative

Name:	Jennifer D. Hindin	Phone Number:	202-719-4975
Company:	Wiley Rein LLP	Fax Number:	202-719-7049
Street:	1766 K Street, 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

<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: S2110</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: </p> <p>(b) File number: SATMOD1999030300021</p>

TYPE OF SERVICE

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:	
<input type="checkbox"/> a. Fixed Satellite	
<input checked="" type="checkbox"/> b. Mobile Satellite	
<input type="checkbox"/> c. Radiodetermination Satellite	
<input 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)	
21. STATUS: Choose the button next to the applicable status. Choose only one.	22. If earth station applicant, check all that apply.
<input type="radio"/> Common Carrier <input checked="" type="radio"/> Non-Common Carrier	<input type="checkbox"/> Using U.S. licensed satellites
	<input type="checkbox"/> Using Non-U.S. licensed satellites
23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:	
<input type="radio"/> Connected to a Public Switched Network <input type="radio"/> Not connected to a Public Switched Network <input checked="" type="radio"/> N/A	
24. FREQUENCY BAND(S): Place an 'X' in the box(es) next to all applicable frequency band(s).	
<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: 1616	Frequency Upper: 1626.5 (Please specify additional frequencies in an attachment)

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.

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>	<input type="radio"/> Yes <input checked="" type="radio"/> No
<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>	<input type="radio"/> Yes <input checked="" type="radio"/> No
<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>	<input type="radio"/> Yes <input checked="" type="radio"/> No
<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?

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 seeks to modify its authorization to place a spare satellite in a parking orbit.

Narrative

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
Donna Bethea-Murphy

46. Title of Person Signing
VP, Regulatory Engineering

-->

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).

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

The public reporting for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection and reduce the burden it causes you, please write to the Federal Communications Commission, AMD-PERM, Paperwork Reduction Project (3060-0678), Washington, DC 20554. We will also accept your comments regarding the Paperwork Reduction Act aspects of this collection via the Internet if you send them to PRA@fcc.gov. PLEASE DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.

Remember – You are not required to respond to a collection of information sponsored by the Federal government, and the government may not conduct or sponsor this collection, unless it displays a currently valid OMB control number or if we fail to provide you with this notice. This collection has been assigned an OMB control number of 3060-0678.

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.

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Iridium Constellation LLC)	File No. SAT-MOD-2012_____
)	
Application for Modification of)	
Authorization (Call Sign S2110))	

**APPLICATION OF IRIDIUM CONSTELLATION LLC
FOR MODIFICATION OF AUTHORIZATION**

Iridium Constellation LLC (“Iridium”), pursuant to Section 25.117 of the rules of the Federal Communications Commission (the “Commission” or “FCC”),¹ hereby seeks to modify its authorization for its “Big LEO” band non-geostationary satellite orbit (“NGSO”) constellation (call sign S2110).² On November 13, 2012, spare satellite SV094 began operation and replaced satellite SV023 in plane 2, slot 2.³ At that time, Iridium suspended mission operations of SV023 in order to maintain it as a spare. Pursuant to a grant of special temporary authority, SV023 is currently drifting to its proposed spare parking orbit at mission altitude approximately 300 kilometers behind SV094. This modification application seeks permanent authority to keep SV023 at this proposed parking orbit.

¹ 47 C.F.R. § 25.117.

² See *Motorola Satellite Communications, Inc. for Authority to Construct, Launch, and Operate a Low Earth Satellite System in the 1616-1626.5 MHz Band*, 10 FCC Rcd 2268 (1995) (“*Motorola Order*”).

³ On November 14, 2012, Iridium filed a spare satellite notification with the Commission pursuant to Section 25.143(d). See Letter from Donna Bethea Murphy, Iridium Constellation LLC, to Marlene H. Dortch, Federal Communications Commission (filed Nov. 14, 2012).

In accordance with the Commission's rules, this application has been filed electronically as an attachment to FCC Form 312.⁴ In Exhibit A, Iridium provides an Engineering Statement containing technical information relating to the proposed positioning of SV023. To the extent necessary, Iridium requests waiver of the requirement to provide electronically a completed FCC Form Schedule S. Except as identified in the narrative below and in the Engineering Statement, the remainder of the technical information previously provided to the FCC is not changing and is incorporated by reference.⁵

I. DESCRIPTION OF THE AUTHORITY REQUESTED

On January 1, 1995, the FCC authorized Iridium's predecessor in interest to launch and operate an NGSO mission constellation of 66 satellites in the Big LEO band along with 12 in-orbit spares "in accordance with the technical specifications set forth in its applications"⁶ The application of Iridium's predecessor in interest specified that spare satellites would "be placed in a nominal 645 km orbit."⁷

⁴ 47 C.F.R § 25.117(c).

⁵ See Motorola Satellite Communications, Inc., Minor Amendment to Application of Motorola Satellite Communications, Inc. for Authority to Construct, Launch and Operate a Low Earth Orbit Satellite System in the 1616-1626.5 MHz Band, File No. SAT-AMD-19941115-00069 (filed Nov. 15, 1994) ("Motorola 1994 Amendment"); Motorola Satellite Communications, Inc., Application for Minor License Modifications and Technical Waivers, File No. SAT-MOD-19960322-00047 (filed Mar. 8, 1996) ("Motorola 1996 Application"); Iridium Constellation LLC, Application for Minor Modification of Mobile Satellite Service Authorization to Update Orbital Debris Mitigation Requirements, File No. SAT-MOD-20080701-00140 (filed Jul. 1, 2008); Iridium Constellation LLC, Application for Modification of Authorization (Call Sign S2110), File No. SAT-MOD-20120813-00128 (filed Aug. 13, 2012) ("Iridium Co-location Modification").

⁶ See *Motorola Order*, ¶ 25. On July 19, 2012, Iridium increased its total number of space stations and commenced operating a pair of co-located satellites in plane 4, slot 7 of its NGSO mission constellation pursuant to a grant of special temporary authority ("STA"). See File No. SAT-STA-20120716-00116 (filed July 16, 2012); File No. SAT-STA-20120813-00129 (filed Aug. 13, 2012); File No. SAT-STA-20120927-00157 (filed

On November 13, 2012, Iridium brought spare satellite SV094 into operation in plane 2, slot 2 to replace satellite SV023, which then suspended mission operations in order to be maintained as a spare. On November 14, 2012, Iridium, pursuant to a grant of special temporary authority, began to drift spare satellite SV023 to a parking orbit at its current mission altitude rather than lowering it to the spare satellite orbit.⁸ This application seeks permanent authority to position spare satellite SV023 approximately 300 kilometers behind operational satellite SV094 in a parking orbit at approximately 778 kilometers, its current mission altitude, instead of the nominal 645-kilometer orbit. SV023 will not be co-located with SV094 and will not operate as part of Iridium's mission constellation.⁹

II. GRANT OF THE MODIFICATION WILL SERVE THE PUBLIC INTEREST

Grant of this modification application will serve the public interest. In evaluating space station modifications, "the Commission has determined that spacecraft design decisions should be left to each space station licensee, because the licensee is in a better position to determine how to tailor its system to meet the particular needs of its customer base."¹⁰ This "flexible" policy "allow[s] satellite operators to respond promptly to

Sept. 27, 2012). Iridium also filed a modification application seeking regular authority to periodically co-locate and operate additional satellites in its mission constellation, which remains pending. *See* Iridium Co-location Modification. As described herein, satellite SV023 will not be co-located with satellite SV094.

⁷ Motorola 1994 Amendment, at Table R-1 n.1.

⁸ *See* Iridium Constellation LLC, Application for Special Temporary Authority, File No. SAT-STA-20121108-00195 (filed Nov. 8, 2012). Iridium estimates that SV023 to reach the parking orbit on approximately December 13, 2012. *See* Engineering Statement, Exhibit A.

⁹ *See* Engineering Statement, Exhibit A; File No. SAT-MOD-20120813-00128.

¹⁰ *DigitalGlobe, Inc.*, Order and Authorization, 20 FCC Rcd 15696, ¶ 9 (I.B. 2005).

changing technological . . . conditions.”¹¹ Accordingly, “[i]f a [modification] proposal will not cause interference to other licensed operations, the Commission generally authorizes it if it is otherwise in the public interest.”¹²

Grant will serve the public interest by minimizing the amount of fuel that SV023 expends and extending the satellite’s operational life. The Commission has previously held that “conserve[ing] fuel for future operations” is in the public interest and justifies grant of a modification application.¹³ Here, very little fuel will be required to position SV023 in a parking orbit at its mission altitude. Iridium will rely primarily on atmospheric drag to move the satellite 300 km over the course of approximately one month. In contrast, Iridium would need to fire the satellite’s thrusters to establish the momentum needed to lower the orbit of the satellite to the nominal 645 km. And, Iridium would need to use fuel again in order re-position the satellite back to mission altitude if the spare is needed as a replacement. As such, grant of this proposed modification application will conserve fuel on SV023. Such fuel savings serve the public interest now by extending the satellite’s mission life and in the future by facilitating safe deorbiting.

Moreover, grant of this modification request poses no interference risk. The proposed location of SV023 approximately 300 km behind SV094 ensures safe station-keeping of both satellites without any overlap in orbital position. Further, SV023 will not operate any mission frequencies while positioned in the parking orbit. It will not be co-

¹¹ *Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Satellite Service*, Memorandum Opinion and Order, 3 FCC Rcd 6972, ¶ 2 (1988); *see also DigitalGlobe, Inc.*, ¶ 9.

¹² *DigitalGlobe, Inc.*, ¶ 9 (citing *EarthWatch Inc.*, Order and Authorization, 16 FCC Rcd 15985, ¶ 10 (I.B. 2001)).

¹³ *SES Americom, Inc.*, Order and Authorization, 20 FCC 11542, ¶ 14 (I.B. 2005).

located or and operated in tandem with SV094. Instead, only the satellite's TT&C frequencies will be utilized.

III. REQUEST FOR WAIVER

To the extent necessary, Iridium requests a waiver of the Section 25.117(c) requirement to provide FCC Form Schedule S.¹⁴ The Commission may waive its rules for good cause shown.¹⁵ The FCC typically exercises its discretion to waive a rule when the particular facts make strict compliance inconsistent with the public interest.¹⁶ In addition, the agency may take into account considerations of hardship, equity, or more effective implementation of overall policy on an individual basis.¹⁷

Good cause exists to waive the requirement for Iridium to submit a FCC Form Schedule S with this modification application. None of the technical information requested by Schedule S will change when Iridium moves SV023 to a parking orbit. Schedule S does not request information with respect to the orbital positioning of spare satellites in non-geostationary satellite orbit constellations. Under such circumstances, the burden associated with completing an electronic FCC Form Schedule S outweighs any benefit. For these reasons, good cause exists, to the extent necessary, to grant a waiver of the requirement to provide FCC Form Schedule S.

¹⁴ 47 C.F.R. § 25.117(c). Iridium will, however, prepare and file a Schedule S in the event the Commission determines that such a submission is necessary.

¹⁵ 47 C.F.R. § 1.3.

¹⁶ The Commission has considerable discretion as to whether to waive its rules. *See Office of Communication of United Church of Christ v. FCC*, 911 F.2d 803, 812 (D.C. Cir. 1990) (upholding the Commission's grant of a waiver "[g]iven the deference due the agency in matters of this sort"); *City of Angels Broadcasting, Inc. v. FCC*, 745 F.2d 656, 663 (D.C. Cir. 1984) (noting that the scope of review of a waiver determination by the Commission "is narrow and constrained").

¹⁷ *WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969), *cert. denied*, 409 U.S. 1027 (1972); *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990).

IV. **CONCLUSION**

For the reasons set forth above, Iridium respectfully requests that the Commission grant this modification application.

Respectfully submitted,

By: Donna Bethea-Murphy

Donna Bethea-Murphy
Vice President, Regulatory
Engineering
Iridium Satellite LLC
1750 Tysons Boulevard
Suite 1400
McLean, VA 22102

December 7, 2012

Engineering Statement

The following describes the proposed drift and positioning of spare satellite SV023 in a parking orbit approximately 300 kilometers behind operation satellite SV094 and at an altitude of approximately 778 kilometers, its current mission altitude:

Drift

- SV023 executed several small station keeping maneuvers to increase its altitude by 50 meters. Relying primarily on atmospheric drag, SV023 is drifting to its storage orbit.
- SV023 is projected to drift for 40 days and arrive at its storage orbit on January 15, 2013.
- SV023 is projected to consume 0.01 kilograms of fuel to reach its mission altitude storage orbit. By contrast, in order to reach a spare orbit altitude of 645 kilometers, SV023 would need to consume 30 kilograms of fuel. This would leave insufficient fuel reserves for SV023 to return to the mission orbit if needed.

Parking Orbit

- SV023 will be maintained at its mission altitude of approximately 778 kilometers. There will be a nominal in-track separation of 300 kilometers between SV023 and the other satellites in the same plane and a minimum polar plane crossing separation of 50 kilometers.
- The 300 kilometer in-track separation was chosen to provide a safe physical separation between SV023 and its in-plane neighbors as well as ensure a safe polar plane crossing separation. SV023 will execute nominal station keeping maneuvers to maintain the desired separation.

Frequencies

- SV023 will use the Ka-Band frequency range of 29.1-29.3 GHz for TT&C uplink communication and 19.4-19.6 GHz for TT&C downlink communication. These are the same frequencies which would be used if SV023 were deployed to the spare satellite altitude. The configuration of SV023 in relation to SV094 will not increase the amount of TT&C data transmitted to or by the satellites. This new configuration will not increase the number Ka-band passes at our TT&C and gateway sites. As such, SV023's parking orbit location will produce no increase in the Ka-band interference environment.

Exhibit B

Certification of Iridium Constellation LLC

I hereby certify that I am a technically qualified person and am familiar with Part 25 of the Commission's Rules and Regulations. The contents of the engineering statement were prepared by me or under my direct supervision and to the best of my knowledge are complete and accurate.

/s/

Walter Everetts
Executive Director, Satellite Operations and SCS Development
Iridium

FCC Form 312, Response to Question 34: Foreign Ownership

Iridium Constellation LLC holds a non-common carrier “Big LEO” NGSO space station constellation license. Accordingly, this modification application is not subject to the foreign ownership limitations set forth in Section 310(b) of the Communications Act.

The Commission has approved the foreign ownership of Iridium Holdings LLC (the indirect parent company of both Iridium Constellation LLC and Iridium Carrier Services LLC, which holds a common carrier earth station license) in excess of twenty-five percent and has provided Iridium Carrier Services LLC flexibility to acquire additional foreign ownership subject to certain conditions. *See Applications of Space Station System Licensee, Inc., Assignor, and Iridium Constellation LLC, Assignee, for Consent to Assignment of License Pursuant to Section 310(d) of the Communications Act*, Memorandum Opinion, Order and Authorization, DA 02-307, 17 FCC Rcd 2271 (Int'l Bur. 2002) (“2002 Iridium Order”); *Iridium Holdings LLC and Iridium Carrier Holdings LLC, Transferors, and GHL Acquisition Corp., Transferee, Applications for Consent to Transfer Control of Iridium Carrier Services LLC, Iridium Satellite LLC, and Iridium Constellation LLC, Memorandum Opinion and Order*, IB Docket No. 08-232, DA 09-1809 (rel. Aug. 14, 2009) (“Iridium-GHL Order”). Since the *Iridium-GHL Order*, any changes to the foreign ownership of Iridium Holdings LLC have been consistent with Iridium Communications Inc.’s status as a publicly traded company and the *2002 Iridium Order* and *Iridium-GHL Order*.¹⁸

¹⁸ This assessment with respect to the foreign ownership of Greenhill and the public shareholders relies on the detailed analyses conducted by the Altman Group in connection with the *Iridium-GHL Order*. *See Iridium-GHL Order* ¶¶ 41-43 (analyses of foreign ownership attributable to participation of GHQ IPO shareholders and Greenhill).

**FCC Form 312, Response to Question 40:
Officers and Directors of Iridium Constellation LLC**

The name, principal business, address, citizenship, and ownership interest of each individual or entity that will directly or indirectly control a ten percent or greater interest in Iridium Constellation LLC is as follows:

Name:	Iridium Satellite LLC
Principal Business:	Holding company and global provider of mobile satellite products and services
Address:	1750 Tysons Boulevard Suite 1400 McLean, Virginia 22102
Citizenship:	U.S.
Voting Interest:	100% (of Iridium Constellation LLC)
Equity Interest:	100% (of Iridium Constellation LLC)

Name:	Iridium Holdings LLC
Principal Business:	Holding Company
Address:	1750 Tysons Boulevard Suite 1400 McLean, Virginia 22102
Citizenship:	U.S.
Voting Interest:	100% (of Iridium Satellite LLC)
Equity Interest:	100% (of Iridium Satellite LLC)

Name:	Syncom-Iridium Holdings Corporation
Principal Business:	Holding Company
Address:	1750 Tysons Boulevard Suite 1400 McLean, Virginia 22102
Citizenship:	U.S.
Voting Interest:	13.7% (of Iridium Holdings LLC)
Equity Interest:	13.7% (of Iridium Holdings LLC)

Name:	Iridium Blocker-B Inc.
Principal Business:	Holding Company
Address:	1750 Tysons Boulevard Suite 1400 McLean, Virginia 22102
Citizenship:	U.S.
Voting Interest:	36.2% (of Iridium Holdings LLC)
Equity Interest:	36.2% (of Iridium Holdings LLC)

Name: Iridium Communications Inc.
Principal Business: Holding Company
Address: 1750 Tysons Boulevard
Suite 1400
McLean, Virginia 22102

Citizenship: U.S.
Voting Interest: 50.1% (of Iridium Holdings LLC)
100% (of Syncom-Iridium Holdings Corp.)
100% (of Iridium Block-B Inc.)

Equity Interest: 50.1% (of Iridium Holdings LLC)
100% (of Syncom-Iridium Holdings Corp.)
100% (of Iridium Block-B Inc.)

Name: Baralonco Limited
Principal Business: Holding Company
Address: Craigmuir Chambers
P.O. Box. 71
Road Town, Tortola, British Virgin Islands

Citizenship: British Virgin Islands
Voting Interest: 16.5% (of Iridium Communications Inc.)
Equity Interest: 16.5% (of Iridium Communications Inc.)

Name: Khalid bin Abdullah bin Abdulrahman
Principal Business: Businessman and Investor
Address: Craigmuir Chambers
P.O. Box. 71
Road Town, Tortola, British Virgin Islands

Citizenship: Saudi Arabia
Voting Interest: 100% (of Baralonco Limited)
Equity Interest: 100% (of Baralonco Limited)

Iridium Constellation LLC is a Delaware limited liability company. Iridium Satellite LLC has been designated as “Manager” of Iridium Constellation LLC. The following individuals have been designated as “officers” via special resolution of the Manager:

Matthew J. Desch, President and Chief Executive Officer
Thomas J. Fitzpatrick, Chief Financial Officer and Treasurer
Thomas D. Hickey, Chief Legal Officer and Secretary