

**** GRANT IN PART / DEFER IN PART ****

S2990 SAT-LOA-20170224-00021 IB2017000487
Space Logistics, LLC
MEV-1



File # SAT-LOA-20170224-00021

Call Sign S2990 Grant Date 12/05/17

(or other identifier)

From see conditions To: see conditions

Approved: *Stephen J. Duall*

Stephen J. Duall
Chief, Satellite Policy Branch

Approved by OMB
3060-0678

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Callsign/Satellite ID: S2990

*with conditions

APPLICATION FOR SATELLITE SPACE STATION AUTHORIZATIONS FCC 312 MAIN FORM FOR OFFICIAL USE ONLY	FCC Use Only
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APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:

Orbital ATK MEV-1 Application

1-8. Legal Name of Applicant			
Name:	Space Logistics, LLC	Phone Number:	703-406-5000
DBA Name:		Fax Number:	
Street:	45101 Warp Drive	E-Mail:	Joseph.Anderson@orbitalatk.com
City:	Dulles	State:	VA
Country:	USA	Zipcode:	20166 -
Attention:	Mr. Joseph Anderson		

ATTACHMENT TO GRANT
 Space Logistics, LLC
 IBFS File No. SAT-LOA-20170224-00021

IBFS File No(s):	SAT-LOA-20170224-00021	<p>GRANT IN PART / DEFER IN PART – With Conditions</p>  <p>International Bureau Satellite Division</p>
Licensee/Grantee:	Space Logistics, LLC (Space Logistics)	
Call Sign:	S2990	
Satellite Name:	MEV-1	
Orbital Location: (required station-keeping tolerance)	See Scope of Grant below.	
Administration:	United States of America	
Nature of Service:	Telemetry, tracking and command (TT&C)	
Scope of Grant:	<p>Authority to construct, deploy, and conduct TT&C operations with the Mission Extension Vehicle-1 (MEV-1) as it: (i) is deployed from the launch vehicle; engages in orbit-raising maneuvers and conducts various post-launch system verification tests, and moves through the geosynchronous transfer orbit (GTO); (ii) raises its orbit to the geostationary orbit (GSO) “graveyard” orbit 300 km above the GSO orbital arc; and (iii) performs rendezvous, proximity operations, and docking (RPOD) with the Intelsat-901 space station (Call Sign S2405) in the graveyard orbit.</p> <p>Space Logistics’ request to relocate MEV-1 with the Intelsat-901 space station (Call Sign S2405) to the orbital location of another operational Intelsat satellite, subject to Intelsat seeking modification of its authorization for Intelsat-901 to specify operations at a new location, is deferred. Action on Space Logistics’ request to relocate MEV-1 to a graveyard orbit at the completion of Intelsat-901’s mission and to undock MEV-1 after de-commissioning of Intelsat-901 is also deferred.</p>	
Service Area(s):	N/A	
Frequencies:	Telemetry, Tracking and Command: 5925-6425 MHz (Earth-to-space) 3700-4200 MHz (space-to-Earth) 13750-14500 MHz (Earth-to-space) 11450-12250 MHz (space-to-Earth)	

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:

1. Space Logistics must prepare the necessary information, as may be required, for submission to the International Telecommunication Union (ITU) to initiate and complete the advance publication, coordination, due diligence, and notification process for these space stations, in accordance with the ITU Radio Regulations. Space Logistics will be held responsible for all cost-recovery fees associated with ITU filings. No protection from interference caused by radio stations authorized by other administrations is guaranteed unless coordination and notification procedures are timely completed or, with respect to individual administrations, by successfully completing coordination agreements. Any radio station authorization for which coordination has not been completed may be subject to additional terms and conditions as required to effect coordination of the frequency assignments of other administrations. See 47 CFR § 25.111(b).
2. Operations in the 11.45-11.7 GHz frequency band are subject to footnote US211 to the United States Table of Frequency Allocations, 47 CFR § 2.106, US211, which urges applicants for airborne or space station assignments to take all practicable steps to protect radio astronomy observations in the adjacent

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bands from harmful interference, consistent with footnote US74.

3. Space Logistics' request for waiver of the United States Table of Frequency Allocations, 47 CFR § 2.106, to operate TT&C functions to earth stations in the United States and its territories and possessions using the 12.2-12.25 GHz (space-to-Earth) frequency band on a non-interference, non-protected basis, is GRANTED. Such operations shall be on a non-interference and non-protected basis within the United States and its territories and possessions located within ITU Region 2. Waiver is justified because TT&C operations in these bands are consistent with No. 5.492 of the ITU Radio Regulations and will not affect any U.S. BSS Plan entry.
4. Operations in the 14.47-14.5 GHz (Earth-to-space) frequency bands are subject to the terms of footnotes 5.149 and US342 to the United States Table of Frequency Allocations, 47 CFR §2.106, 5.149, US342, which urge applicants to take all practicable steps to protect the radio astronomy service from harmful interference.
5. Pursuant to footnote US337 of the United States Table of Frequency Allocations, 47 CFR § 2.106, US337, any earth station in the United States and its possessions communicating with the MEV-1 space station in the 13.75-13.8 GHz (Earth-to-space) frequency band is required to coordinate through the National Telecommunications and Information Administration (NTIA) Interdepartment Radio Advisory Committee (IRAC) Frequency Assignment Subcommittee (FAS) to minimize interference to the National Aeronautics and Space Administration (NASA) Tracking and Data Relay Satellite System, including manned space flight.
6. In the 13.75-14.0 GHz (Earth-to-space) frequency band, receiving space stations in the fixed satellite service must not claim protection from radiolocation transmitting stations operating in accordance with footnote US356 the United States Table of Frequency Allocations, 47 CFR § 2.106, US356.
7. Operations of any earth station in the United States and its possessions communicating with the MEV-1 space station in the 13.75-14.0 GHz (Earth-to-space) frequency band must comply with footnote US356 to the United States Table of Frequency Allocations, 47 CFR § 2.106, US356, which specifies a mandatory minimum antenna diameter of 4.5 meters and recommended minimum and maximum equivalent isotropically radiated powers (e.i.r.p.). Operations of any earth station located outside the United States and its possessions communicating with the MEV-1 space station in the 13.75-14.0 GHz (Earth-to-space) frequency band must be consistent with No. 5.502 to the ITU Radio Regulations, which allows a minimum antenna diameter of 1.2 meters for earth stations of a geostationary satellite orbit network and specifies mandatory power limits.
8. Operations of any earth station in the United States and its possessions communicating with the MEV-1 space station in the 13.77-13.78 GHz (Earth-to-space) frequency band must comply with footnote US357 to United States Table of Frequency Allocations, 47 CFR § 2.106, US357, which specifies that the maximum e.i.r.p. density of emissions not exceed 71 dBW in any 6 MHz band within the 13.77-13.78 GHz (Earth-to-space) frequency band for communications with a space station in geostationary-satellite orbit.¹ Operations of any earth station located outside the United States and its possessions communicating with the MEV-1 space station in the 13.77-13.78 GHz (Earth-to-space) frequency band must comply with No. 5.503 of the ITU Radio Regulations, which specifies a required maximum e.i.r.p. density of emissions (limit is dependent on antenna diameter) for communications with a space station in geostationary-satellite orbit.
9. We grant Space Logistics' request for a waiver of section 25.114(c)(5) of the Commission's rules, 47 CFR § 25.114(c)(5), that requires, for space stations in geostationary orbit, specification of the orbit

¹ Footnote US357 places a restriction on FSS earth station operations in order to protect government operations in the band, including manned space flight. 47 CFR § 2.106, US357.

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location requested. Space Logistics requests to delay the specification of the geostationary orbit location until Intelsat selects and identifies the orbital location to which Intelsat-901 will be relocated.² Because we defer action on Space Logistics' request to relocate MEV-1 with Intelsat-901, Space Logistics may file an amendment to its application at a later time providing the information required by section 25.114(c)(5). We find that this delay in providing the specified orbit location will not prejudice other operators and does not undermine the purpose of the rule.

10. We grant Space Logistics' request to waive the provision of responses to information requests contained Schedule S related to "orbital longitude information", channel width and center frequency information, minimum and maximum saturation flux density for command beams, and the polarization of Ku-beams.³ Space Logistics states that limitations in the Schedule S software prevented it from providing the information via Schedule S and that it has instead provided this information in narrative format.⁴ We agree with Space Logistics that a waiver of Schedule S in this context will not undermine the purpose of Schedule S and is in the public interest.
11. We grant Space Logistics' request to waive the bond requirement contained in section 25.165(a) of the Commission's rules. We also waive, on our motion, the milestone requirements contained in section 25.164. At this time, the authority granted to Space Logistics is solely for the use of TT&C frequencies used for orbit raising of MEV-1 and RPOD with Intelsat-901 in a graveyard orbit above the geostationary arc. We find that such operations of limited duration and scope, outside of geostationary orbit at altitudes and locations unlikely to be utilized by operational spacecraft, do not implicate the warehousing concerns that the Commission's milestone and bond requirements are designed to address. Accordingly, waiver will not undermine the purpose of these rules. We defer action on Space Logistics's request for waiver of section 25.164 in connection with its future operations with Intelsat-901 until such time as Space Logistics amends its application to specify the orbital location at which the combined Intelsat-901/MEV-1 space stations will operate.
12. The license term for the space station is 15 years and will begin on the date that Space Logistics certifies to the Commission that MEV-1 has been successfully launched. Space Logistics must file its certification of commencement of operation with the Commission within five business days of MEV-1 being launched.

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 C.F.R. § 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:	December 5, 2017	
Term Dates	From: see conditions	To: see conditions

² Narrative at 10.

³ *Id.* at 12-13.

⁴ *Id.* at 13 and Technical Appendix.

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Approved:



Stephen L. Duall
Chief, Satellite Policy Branch

9-16. Name of Contact Representative

Name:	Mr. Tony Lin	Phone Number:	202-637-5795
Company:	Hogan Lovells US LLP	Fax Number:	
Street:	555 Thirteenth Street NW	E-Mail:	Tony.Lin@hoganlovells.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20004 -
Attention:	Mr. Tony Lin	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.

a.

- (N/A) a1. Earth Station
 a2. Space Station

b.

- b1. Application for License of New Station
(N/A) b2. Application for Registration of New Domestic Receive-Only Station
(N/A) b3. Amendment to a Pending Application
(N/A) b4. Modification of License or Registration
(N/A) b5. Assignment of License or Registration
(N/A) b6. Transfer of Control of License or Registration
(N/A) b7. Notification of Minor Modification
(N/A) b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite
- b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States
 b10. Replacement Satellite Application – no new frequency bands
 b11. Replacement Satellite Application – new frequency bands (Not eligible for streamlined processing)
 b12. Petition for Declaratory Ruling to be Added to the Permitted List
(N/A) b13. Other (Please specify)

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):

17c. Fee Classification BNY – Space Station (Geostationary)

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

(a) Call sign of station:

Not Applicable

19. If this filing is an amendment to a pending application enter:

(a) Date pending application was filed:

Not Applicable

(b) File number of pending application:

Not Applicable

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 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 checked="" type="checkbox"/> g. Other (please specify) Mission Extension Vehicle</p>	
<p>21. STATUS: Choose the button next to the applicable status. Choose only one.</p> <p><input type="radio"/> Common Carrier <input checked="" type="radio"/> Non-Common Carrier</p>	<p>22. If earth station applicant, check all that apply.</p> <p>Not Applicable</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 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 checked="" type="checkbox"/> a. C-Band (4/6 GHz) <input checked="" 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: 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.

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

26. TYPE OF EARTH STATION FACILITY: Not Applicable

PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an "X" in the box(es) next to all that apply.) Not Applicable

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

Applicant requests FCC authority to launch and operate a mission extension vehicle.

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.)	
<input type="radio"/> Individual <input type="radio"/> Unincorporated Association <input type="radio"/> Partnership <input type="radio"/> Corporation <input type="radio"/> Governmental Entity <input checked="" type="radio"/> Other (please specify) Limited Liability Company	
45. Name of Person Signing Mr. Thomas L. Wilson	46. Title of Person Signing President, Space Logistics, LLC
47. Please supply any need attachments. 1: 2: 3:	
WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).	

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