

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

) File Nos.
)
Application of Space Logistics, LLC) SAT-LOA-20170224-00021
for Authority to Launch and Operate a Mission)
Extension Vehicle) SAT-AMD-_____
)

AMENDMENT

Space Logistics, LLC (“Space Logistics”), a wholly-owned subsidiary of Northrop Grumman Innovations Systems, Inc. (“NGIS”),¹ formerly Orbital ATK, Inc., hereby amends its pending application² regarding the MEV-1 spacecraft to specify 27.5°W as the operating location of the combined vehicle stack (“CVS”) with IS-901 and to request authority at the end of the contractual mission to relocate the CVS to 150 km above the geostationary orbit (“GSO”) arc and undock the MEV-1 from IS-901 at that altitude.³ Intelsat is contemporaneously filing a

¹ NGIS is a wholly-owned subsidiary of Northrop Grumman Corporation. *See* Stamp Grant, Space Logistics, Transfer of Control Application, File No. SAT-T/C-20180109-00006 (granted Feb. 15, 2018).

² On December 5, 2017, the FCC granted Space Logistics the authority to construct, deploy and conduct TT&C operations with MEV-1 as the spacecraft: (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; (ii) raises its orbit to the GSO “graveyard” orbit, 300 km above the GSO orbital arc; and (iii) performs rendezvous, proximity operations, and docking (“RPOD”) with IS-901 in the graveyard orbit. The FCC deferred the request by Space Logistics for authority to (iv) relocate the CVS after RPOD to the orbital location of another operational Intelsat satellite and (v) relocate the CVS to the graveyard orbit after the completion of the contractual mission and undock MEV-1 from IS-901, in both cases pending Intelsat’s modification of its IS-901 authorization to operate at a new orbital location. *See* Stamp Grant, Space Logistics, Application, File No. SAT-LOA-20170224-00021 (granted Dec. 5, 2017) (“Space Logistics Stamp Grant”).

³ *See* Space Logistics Stamp Grant at ¶ 9 (“Space Logistics may file an amendment . . . providing the information required by section 25.114(c)(5).”). For completeness, Space Logistics reconfirms that MEV-1 (and the CVS) will operate within a station-keeping box of $\pm 0.05^\circ$ N-S and $\pm 0.05^\circ$ E-W and that the antenna axis attitude of MEV-1 can be maintained within a value of 0.06° with respect to roll and pitch and 0.1° with respect to yaw, in each case consistent with

modification application of its IS-901 license requesting authority to operate at 27.5°W as a CVS.⁴ The CVS will replace IS-907, which is currently authorized to operate at 27.5°W in both the C-band and Ku-band frequencies.⁵ Space Logistics accepts that its license will be conditioned on a requirement to operate within the frequencies and technical parameters authorized to IS-901 at 27.5°W.⁶

Specifically, Space Logistics and Intelsat have coordinated the use of the following frequencies for MEV-1: 3944.5 MHz and 3955.5 MHz (space-to-Earth) and 6170.0 MHz and 6180.0 MHz (Earth-to-space). Depending on operational needs, the parties may revise the coordinated frequencies in the future, and accordingly, Space Logistics requests that it be allowed to operate within the full range of the requested frequencies bands as coordinated with Intelsat. Intelsat is filing a letter in support of the grant of this application.

Space Logistics has assessed and limited the probability of the CVS becoming a source of debris by collisions with large debris or other space stations at the proposed operating location.

47 C.F.R. § 25.114(c)(5). *See* Space Logistics, Technical Narrative, File No. SAT-LOA-20170224-00021, at 7 (filed Feb. 24, 2017).

⁴ As discussed in the Intelsat application, after the contractual mission, Intelsat intends to return IS-901 to service, and undocking with MEV-1 at 150 km rather than 300 km above the GSO arc would conserve propellant for the redeployment process.

⁵ *See* Grant, Intelsat License LLC, Application, File No. SAT-MOD-20020918-00183 (granted Dec. 31, 2002); *see also* Grant, Intelsat License LLC, Application, File No. SAT-LOA-20000119-00025 (granted Aug. 2, 2000).

⁶ *See* Space Logistics, Technical Narrative, File No. SAT-LOA-20170224-00021, at 17 (filed Feb. 24, 2017). Space Logistics has demonstrated that its operations will comply generally with the FCC's two-degree spacing policy. *See* Space Logistics, File No. SAT-LOA-20170224-00021, at Narrative p. 11 and Technical Narrative Section 9.1, Annexes E and F (filed Feb. 24, 2017).

As stated in the contemporaneously filed Intelsat application, there are no other satellites planned or operating near 27.5°W that would have an overlap in station-keeping volume with the CVS.⁷

Space Logistics also requests that the FCC grant its waiver requests of the milestone buildout and bond requirement for the reasons stated in its license authorization application.⁸ Moreover, the CVS will relocate to 27.5°W in a manner that ensures continuous coverage of the same area on the same frequency bands as IS-907 and, accordingly, satisfies the replacement satellite exception to the bond requirement.⁹ Alternatively, Space Logistics asks the International Bureau to extend the bond submission deadline until 30 days after the scheduled

⁷ The MEV flight safety profile for RPOD and CVS operations are discussed in the MEV-1 license authorization application. *See* Space Logistics, Technical Narrative, File No. SAT-LOA-20170224-00021, at 17 (filed Feb. 24, 2017).

⁸ Space Logistics, Narrative, File No. SAT-LOA-20170224-00021, at 9-10 (filed Feb. 24, 2017) (waiver of bond requirement for Space Logistics is warranted because there is no risk of spectrum warehousing; the CVS would use frequencies already authorized for use by IS-907). The FCC had deferred consideration of the waiver requests pending the specification of the operating location for the CVS. *See* Space Logistics Stamp Grant at ¶ 11. To the extent necessary, Space Logistics also incorporates by reference any waiver requests in its license authorization application necessary for prosecuting this amendment application.

⁹ *See* 47 C.F.R. § 25.165(e) (defining “replacement space station” as one which operates within ± 0.15° of the retiring space station assigned orbital location, communicates continuously on the same frequency bands in the same coverage area as the retiring space station, and is scheduled to be launched and brought into use before retirement of the existing space station). As an additional consideration for waiver of the milestone and bond requirements, construction of MEV-1 is nearly complete, and the satellite is scheduled for launch on a Proton launch vehicle in the first half of 2019. Thus, requiring Space Logistics to post a bond in light of the imminent launch of MEV-1 is not necessary to ensure that the company is proceeding with the construction and launch of its satellite, which is the goal of the bond and milestone requirements. *See, e.g., Amendment of the Commission’s Space Station Licensing Rules and Policies*, First Report and Order and Further Notice of Proposed Rulemaking, 18 FCC Rcd 10760, at ¶¶ 167, 173 (2003); 47 C.F.R. § 25.165.

launch date of MEV-1, consistent with FCC precedent,¹⁰ and upon such launch conclude that Space Logistics has satisfied its bond and milestone requirements.¹¹

For the foregoing reasons, Space Logistics respectfully requests that the International Bureau grant this amendment application.

Respectfully submitted,

/s/ Thomas L. Wilson

Tony Lin
J. Ryan Thompson
HOGAN LOVELLS US LLP
555 13th Street, N.W.
Washington, DC 20004

Thomas L. Wilson
President
SPACE LOGISTICS, LLC
45101 Warp Drive
Dulles, VA 20166

Counsel for Space Logistics, LLC

February 7, 2019

¹⁰ See, e.g., Stamp Grant, Spire Global, Inc., Satellite Bond Extension Request, File No. SAT-LOA-20151123-00078 (granted Apr. 14, 2016); Stamp Grant, Planet Labs, Request for Extension of Time, File No. SAT-MOD-20140321-0032 (granted Aug. 11, 2014); Stamp Grant, New Skies Satellites B.V., Request for Extension of Time, File No. SAT-PPL-20110620-00112 (granted Apr. 4, 2012); Stamp Grant, Intelsat North America LLC, Request for Extension of Time, File No. SAT-LOA-20100726-00167 (granted Dec. 16, 2010).

¹¹ After launch, MEV-1 will be subject to a variety of tests and maneuvers as part of the RPOD process. As a result, the CVS will not be at the operating location for several months. Requiring Space Logistics to post a bond for the few months after launch but before arriving at 27.5°W similarly would not serve the purpose of the bond or milestone requirement.