

**Before the
Federal Communications Commission
Washington, DC 20554**

In the Matter of	)				
	)				
Space Logistics, LLC	)	File	No.	SAT-LOA	_____
	)				
Authority to Launch and Operate a Mission	)				
Extension Pod	)				
	)				
	)				

APPLICATION

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**APPLICATION FOR AUTHORITY TO LAUNCH AND OPERATE A MISSION
EXTENSION POD**

Space Logistics, LLC (SpaceLogistics), a Northrop Grumman Company, hereby applies for authority to operate the telemetry and commanding systems of the Mission Extension Pod-1 (MEP-1) spacecraft for launch, orbit raising, and parking in geosynchronous orbit (GSO).

The MEP is a propulsion augmentation spacecraft designed to provide delta-V augmentation for client vehicles (CVs) using electric propulsion. It is our second-generation in-space servicing spacecraft and leverages our proven Mission Extension Vehicle (MEV) technology to extend the life of satellites at GSO. The MEP is installed on a CV using our servicing system called the Mission Robotic Vehicle (MRV-1)¹ and offers a smaller, simpler and more cost-effective solution for propulsion augmentation services.

MEP-1 will launch together with MEP-2, MEP-3² and MRV-1 and is scheduled for launch between the second and fourth quarter of 2026, after which time it will conduct orbit raising before temporarily parking at the orbital location of 141° W.L. SpaceLogistics will

¹ See Application of Space Logistics, LLC, File No. SAT-LOA-20250930-00313 (filed Sept. 30, 2025) for MRV-1 (pending).

² Applications for authority to launch and operate MEP-2 and MEP-3 are being filed contemporaneously with this application.

identify the customer operator and CV and will seek authority via future amendment or license modification to relocate MEP-1 to the respective CV orbital location, conduct rendezvous and proximity operations (RPO), and capture and install the MEP on the CV. Following MEP installation, SpaceLogistics will coordinate with the customer to transition MEP-1 operations to the customer to enable operation of the MEP and CV, referred to as the augmented vehicle stack (AVS). SpaceLogistics will require evidence that the customer has obtained the required authorization from their regulatory authority to operate the AVS prior to the start of the MEP RPO and installation process.

I. Background and System Description

SpaceLogistics was established to help make space sustainable through in-orbit servicing. SpaceLogistics provides in-orbit satellite servicing to geosynchronous satellite operators using its fleet of commercial servicing vehicles. By enhancing in-orbit flexibility and options for GSO satellite operators, SpaceLogistics will be able to assist those operators in maximizing the value of their in-orbit assets and allow them to better respond to customer demand. This fleet consists of two on-orbit Mission Extension Vehicles (MEV-1 and MEV-2), and soon the second-generation systems (launching in 2026) consisting of MRV-1 and MEPs. The MRV installs these MEPs onto client satellites in GSO orbit extending the fuel life of the client satellite by an average of six years.

Operationally, SpaceLogistics will use experienced personnel and organizations for manufacturing, integration, testing, and operations. The MEP design itself is largely based on flight-proven equipment with flight heritage, as discussed above, and all manufacturing will be subject to industry standard requirements review and verification, including extensive ground testing and demonstrations. SpaceLogistics will incorporate a mission safety oversight committee to review each rendezvous, proximity operations, and docking (RPOD) mission. SpaceLogistics

will conduct thorough compatibility verification and validation for each future CV and will conduct functional in-orbit tests for each MEP prior to docking or capturing events.

All of SpaceLogistics' missions and activities will be conducted cooperatively with the operator of the CV and pursuant to commercial arrangements. To be clear, there will be no uncoordinated near approaches to other known resident space objects.

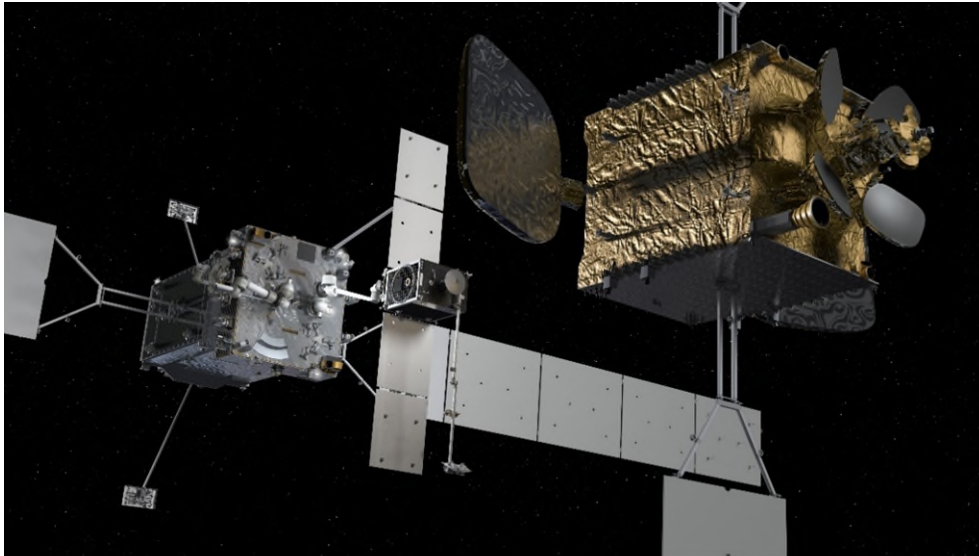


Figure 1: Illustration of the MEP being installed by MRV onto a Typical Client Satellite

The MEPs are being designed and built by Northrop Grumman and are largely based on the two MEV spacecraft that are currently in orbit. As of September 2025, these two spacecrafts have now safely delivered more than a combined 10 years of life extension. The MEV is based on the Northrop Grumman GEOSTar bus, which has been used as the bus for more than 40 GEO communication satellites.³

Building upon the success of the MEV, the MEP mechanically attaches to a client's Liquid Apogee Engine (LAE) using an improved capture mechanism. Since the MEP is significantly smaller and lighter than the MEV, it does not require stanchions contacting the

³ See Application of Space Logistics, LLC, File No. SAT-LOA-20191210-00144, at p. 3 (granted March 25, 2020) (describing GEOSTar bus).

launch adaptor ring. This makes the MEP compatible with a broader range of GEO satellites than the MEV. While the MEP cannot undock from its CV on its own, it has been designed such that it can be removed and re-installed on another satellite with the assistance of the MRV.

The MEP has a redundant electric propulsion system to perform Electric Propulsion Orbit Raising (EPOR) and station keeping. This system is sized to perform geosynchronous transfer orbit (GTO) to GSO orbit raising in approximately 10 months. Once on orbit and installed by the MRV, the MEP will provide approximately 6 years of full North-South and East-West station keeping for a 2,000 kg CV.

To transfer the MEP from GTO to GSO, the MEP has a minimal attitude control system (ACS) sized only for controlling the MEP through its EPOR and until the MRV captures the MEP for installation on the CV. Once the MEP is retrieved by the MRV, the ACS system is disabled.

Like the MEV, the MEP's Ku-band Telemetry, Tracking and Control (TT&C) system also operates within the spectrum allocation of the CV, and like MEV, the TT&C frequency is tunable and coordinated as needed to prevent interference.

A. Concept of Operations

The first three MEPs (i.e., MEP-1, MEP-2 and MEP-3) are currently scheduled for launch into GTO between the second and fourth quarter of 2026 on a SpaceX Falcon 9 together with MRV-1. Following separation from the launch vehicle, the MRV and each MEP will perform its deployments, conduct initial in-orbit testing, and then begin its orbit raising to GSO. Once achieving GSO, if the CV is known, each MEP will position itself in the vicinity of the CV it is assigned to. The MRV will retrieve the MEP and then install it onto its CV. The MRV will then relocate to its next MEP servicing mission. If the CV is not yet known, the MEP will temporarily

position itself at 141 W.L. until the CV is identified. We estimate that additional MEPs will be launched after this first batch of three. SpaceLogistics customers are expected to include both U.S. and non-U.S. satellite owner/operators. MEP servicing contracts will require the CV owner/operator to obtain any licenses and approvals from their State authorization and supervision authority and provide SpaceLogistics with evidence of said approvals.

A depiction of a generalized mission concept for the MEP is provided in Figure 2 below.

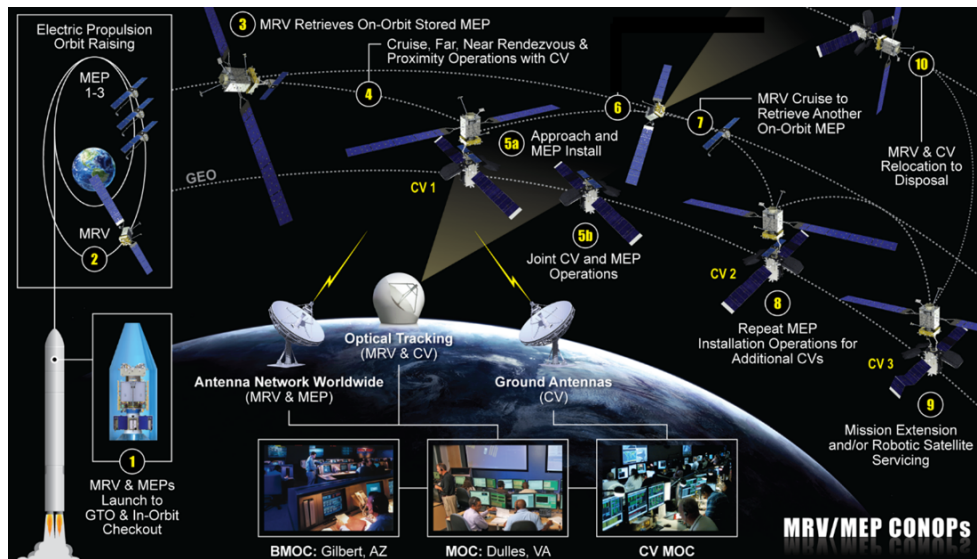


Figure 2: Generalized Mission Concept for MRV and MEPs.

B. Communication System

As discussed in more detail in the Technical Appendix, the MEP will only conduct TT&C communications. SpaceLogistics requests authority to operate the MEP in the Ku-band frequencies identified in Table 1.

	Command - Uplink		Telemetry - Downlink	
	Tunable Frequency Range (MHz)	Polarization	Tunable Frequency Range (MHz)	Polarization
Ku-Band	13750 – 14500	LHCP or RHCP	11450 – 12200	LHCP or RHCP

Table 1: MEP TT&C Tunable Frequency Ranges and Polarizations

The Ku-band uplink and downlink is allocated to the Fixed-Satellite Service (FSS), *inter alia*, internationally and in the U.S.⁴ If a commercial customer is licensed or otherwise coordinated to operate in the Ku-band, then they will operate the MEP Ku-band system within their licensed spectrum while within their operational longitudes. If the commercial customer is not licensed to operate using Ku-band spectrum, then SpaceLogistics will work with the customer to coordinate and gain authorization to use sufficient Ku-band spectrum to perform our services for the customer. As described below, to the extent necessary, SpaceLogistics requests waiver of the Commission's rules, including the, U.S. Table of Frequency Allocations to conduct such operations.

C. Mission Operations

The primary Mission Operations Center (MOC) for MEP launch, orbit raising, drift and parking prior to customer delivery is located in Northrop Grumman's Dulles, Virginia facilities. The MOC will provide monitoring and control and on-call engineering support around the clock including a team of full-time engineering support staff. A backup operations facility is located in Gilbert AZ. Both MOCs are co-located with the MEV and MRV primary and backup MOCs.

During orbit raising and drift, the MEP will be supported by a network of ground stations operating in the required frequencies through a commercially contracted ground network service. Following delivery, the MEP will be operated by the customer using their ground assets. The ground segment is described in further detail in the Technical Annex.

II. Authority Requested for MEP-1

By this application, SpaceLogistics requests FCC authority to launch and operate the command and telemetry communication systems of the MEP-1 spacecraft. The requested

⁴ See 47 C.F.R. § 2.106.

authority, described below, includes the operations during launch, separation, initialization and check out, in-orbit testing, orbit raising, and parking at a temporary location. While parked, the MEP-1 will operate within frequencies and technical parameters that are coordinated with the GSO operator operating at the operational location(s). These steps ensure that the MEP-1 does not cause interference with any other operators.

Telemetry and Command Operations During Launch Through Orbit Raising

As described in Section I.B above, SpaceLogistics plans to utilize the Ku-band system for the launch and orbit raising period of MEP-1 standalone operations. After the first few weeks of spacecraft deployments, checkout & in-orbit testing, SpaceLogistics anticipates utilizing 4-hour contact periods once a day for six days a week during the majority of the EPOR period, which is expected to last 10 months. The seventh day each week is expected to include an 8-hour contact period to allow time to upload the upcoming weeks' maneuver burn profile and associated attitude control plan. SpaceLogistics will typically upload a two-week plan and update this plan each week so if the upload is not successful, for any reason, the Company can continue with EPOR with several days remaining to update the next two-week plan. During each daily contact, stored telemetry is downloaded for evaluation by the engineering team, and during the non-contact periods no commanding or telemetry transmitting is performed. The ground system support during these phases will be through a commercial ground network.

Telemetry and Command Operations During Drift and Parking Orbit

SpaceLogistics anticipates operations during a drift and parking orbit period to be the same as conducted during the EPOR period with daily contact periods using the Ku-band system. The ground network to be utilized in these phases will be dependent on the longitudinal location and the drift rate, if any, as discussed further in the technical appendix.

Telemetry and Command Operations During MEP Installation

Upon arrival of the MEP at the CV location, SpaceLogistics anticipates that TT&C operations will transition from Space Logistics control and associated leased ground network to the customer mission control center and ground network for Ku-band operations. Upon transition to the customer network, TT&C coverage for the MEP will be continuous. Upon coordination with the customer, RPO operations will be conducted to enable the MRV to retrieve, capture and install the MEP on the CV. Details will be addressed, and authority to conduct such operations will be requested in a future amendment or license modification.

III. Waiver Requests

The Commission may waive any of its rules if there is “good cause” to do so.⁵ In general, waiver is appropriate if (1) special circumstances warrant a deviation from the general rule; and (2) such deviation would better serve the public interest than would strict adherence to the rule.⁶ Generally, the Commission will grant a waiver of its rules in a particular case if the relief requested would not undermine the policy objective of the rule in question and would otherwise serve the public interest.⁷ Here, the development of in-space service capabilities for satellites in GSO orbit will make space more sustainable, including by mitigating orbital debris risk and extending the life of satellites in-orbit, promote efficient use of resources, and help maximize value of investments by satellite operators, warranting waiver of FCC rules.

⁵ See 47 C.F.R. § 1.3; *Northeast Cellular Tel. Co. v. FCC*, 897 F.2d 1164 (D.C. Cir. 1990); *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969).

⁶ See *Northeast Cellular*, 897 F.2d at 1166.

⁷ See *WAIT Radio*, 418 F.2d at 1157.

A. Bond and Milestone Requirements

SpaceLogistics requests waiver of the FCC's bond requirement⁸ and satellite construction milestone requirements.⁹ As the Bureau previously concluded with respect to MEV-1 and MEV-2,¹⁰ no "new" spectrum is effectively being requested for use by the MEP because the MEP and future client vehicles will operate on frequencies already authorized by an existing satellite. Accordingly, there can be no risk or threat of spectrum warehousing by the MEP, the prevention of which is the underlying purpose of the bond requirement and milestone requirement.¹¹

B. Requested Orbital Location

SpaceLogistics requests waiver of the requirement to specify a permanent operating GSO orbital location for MEP-1 in this application. MEP-1 will be temporarily parked at 141° W.L.. SpaceLogistics will submit a future amendment to this application or license modification application identifying the customer operator and CV and requesting authorization to rendezvous and dock with that CV. Following docking and in-orbit check out, Space Logistics anticipates that the licensing of the MEP as part of the AVS will revert to the customer through their CV's authorization. Accordingly, because MEP-1 will not remain at the identified parking orbit location, SpaceLogistics requests waiver of this requirement to the extent necessary.

⁸ 47 C.F.R. § 25.165(a).

⁹ 47 C.F.R. § 25.164.

¹⁰ See Stamp Grant, File Nos. SAT-LOA-20170224-00021, SAT-AMD-20190207-00008, ¶ 11 (granted Jun. 20, 2019); Stamp Grant, File No. SAT-LOA-20191210-00144, ¶ 11 (granted March 25, 2020).

¹¹ See, e.g., *Comprehensive Review of Licensing and Operating Rules for Satellite Services*, Further Notice of Proposed Rulemaking, 29 FCC Rcd. 12116, 12123-24 ¶ 19 (2014).

C. Frequency Use

SpaceLogistics believes that this application for use of Ku-band frequencies can be processed without waiver of the Commission's rules.¹² However, to the extent necessary, SpaceLogistics requests waiver of the Commission's rules, including the U.S. Table of Frequency Allocations, to conduct operations. Such frequency use will be very limited, and in all circumstances will be coordinated with potentially impacted operators. Indeed, SpaceLogistics will coordinate with the client or operator authorized to use the spectrum and will operate only a subset of the frequencies authorized. Thus, the use of frequencies pursuant to this application are not mutually exclusive with and will not cause harmful interference to or request protection from interference from the client vehicle or other users of the requested frequencies. For the same reasons, the operations of the MEP on the requested frequencies do not violate the FCC's two-degree spacing requirement.¹³

Further, grant of the waiver for limited use of these frequencies will support safe operations in-space and further development of US in-space servicing, assembly, and manufacturing capabilities, in line with U.S. policy objectives.¹⁴ For these reasons, grant of a waiver to allow use of these frequencies, as proposed in this application, is warranted.

¹² 47 C.F.R. §§ 25.112, 25.155, 25.158.

¹³ 47 C.F.R. §§ 25.114(d)(7), 25.140(a).

¹⁴ See, e.g., Gov. Accountability Office, In-Space Servicing, Assembly, and Manufacturing: Benefits, Challenges, and Policy Options, GAO-25-107555, (July 10, 2025), <https://www.gao.gov/products/gao-25-107555>.

D. Schedule S

SpaceLogistics clarifies certain of its responses to Schedule S and, to the extent necessary, requests a limited waiver of the Commission's rules, which requires certain information to be provided in the Schedule S.¹⁵

- In response to the Schedule S question regarding "Orbital Longitude Information," SpaceLogistics entered the 141 W.L. latitude to reflect SpaceLogistics' identified parking spot prior to conducting a servicing mission for MEP-1. As discussed above, SpaceLogistics requests a waiver of the requirement to specify a permanent operating orbital location for the MEP in this application to the extent necessary.¹⁶
- The Schedule S requests channel width and center frequency information for each transmit and receive channel. As discussed in more detail in the Technical Appendix, the MEP TT&C system is tunable in increments of 100 kHz. Accordingly, providing this information would require thousands of entries and would be burdensome. Instead, SpaceLogistics has provided a representative sample in the Schedule S using the center of Ku-band frequencies for each data mode.¹⁷
- In response to the Schedule S questions requiring minimum and maximum saturation flux density for the command beams, SpaceLogistics entered "-1" and "0," respectively, because the program would not permit completion of the Schedule S form without entries in those fields. The provision of this information is not applicable to command beams, and the MEP has no other receiving beams.¹⁸

Further, strict application of the rules here is unnecessary to serve the purposes of the rules, which is to ensure that the Commission has all the relevant information to evaluate the application. Because SpaceLogistics has provided all relevant information in the Narrative, Technical Appendix and Schedule S, waiver of these Schedule S requirements is appropriate.¹⁹

¹⁵ 47 C.F.R. § 25.114(c).

¹⁶ *Supra* Part III.B.

¹⁷ *See* Technical Annex at Section 3.2.

¹⁸ 47 C.F.R. § 25.114(c)(v).

¹⁹ 47 C.F.R. § 1.3; *see, e.g.*, Stamp Grant, ViaSat, Inc., SAT-LOI-20140204-00013 (granted Jun. 18, 2014) (waiving Schedule S requirements because they were found to be unnecessary for the space station application).

IV. Public Interest

Grant of this application will serve the public interest by helping make space more sustainable through enabling support and maintenance services for satellites in GSO orbit.²⁰ The MEP's servicing ability makes efficient use of resources and maximizes the value of investments by satellite operators. Further, the use of a MEP generally allows operators to better manage in-orbit satellite assets and increases flexibility with respect to the timing of construction of new replacement satellites. The Commission has consistently recognized the "huge costs of building and operating satellite space stations" and has historically adopted policies that enhance the value of those investments.²¹ Moreover, grant of this application will facilitate the development of innovative technologies, help maintain U.S. leadership in the satellite industry, and support the growth of U.S. jobs. Importantly, in the provision of the proposed MEP services, Space Logistics is committed to acting responsibly, transparently, and cooperatively.

V. International Telecommunication Union ("ITU") Compliance

At its various operational orbits, the MEP will operate under the ITU filing(s) of the satellite to be serviced. However, while parked at 141 degrees west longitude, MEP-1 (alongside MEP-2 and MEP-3) will operate under its own ITU filing. SpaceLogistics is aware that processing fees are currently charged by the ITU for satellite filings, and that Commission applicants are responsible for any and all fees charged by the ITU. SpaceLogistics is aware of and unconditionally accepts this requirement and responsibility to pay any ITU cost recovery

²⁰ *Amendment of the Commission's Space Station Licensing Rules & Policies*, 18 FCC Rcd. 12507, 12519 ¶ 8 n.16 (2003) ("2003 Space Station Order") ("Commission policy favors continuity of service") (citing *Loral Spacecom Corp.*, Memorandum Opinion and Order, 16 FCC Rcd. 12490, 12490 ¶ 1 (Int'l Bur., Sat. and Rad. Div., 1995)); *2015 Satellite Service Order* at 14878, Appendix C (listing "ensuring continuity of service" among the objectives of its rule revisions).

²¹ *Loral Spacecom* at 12492 ¶ 7; see also *2003 Space Station Order* at 12509-10 ¶ 7.

fees associated with any ITU filings that the Commission may make on behalf of SpaceLogistics for MEP-1 in the future and, accordingly, attaches as Exhibit 2 to this application an ITU Cost Recovery Letter.

VI. Conclusion

Based on the foregoing, Space Logistics respectfully requests that the Commission grant the request for authority to launch and operate the MEP spacecraft.

Respectfully submitted,

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