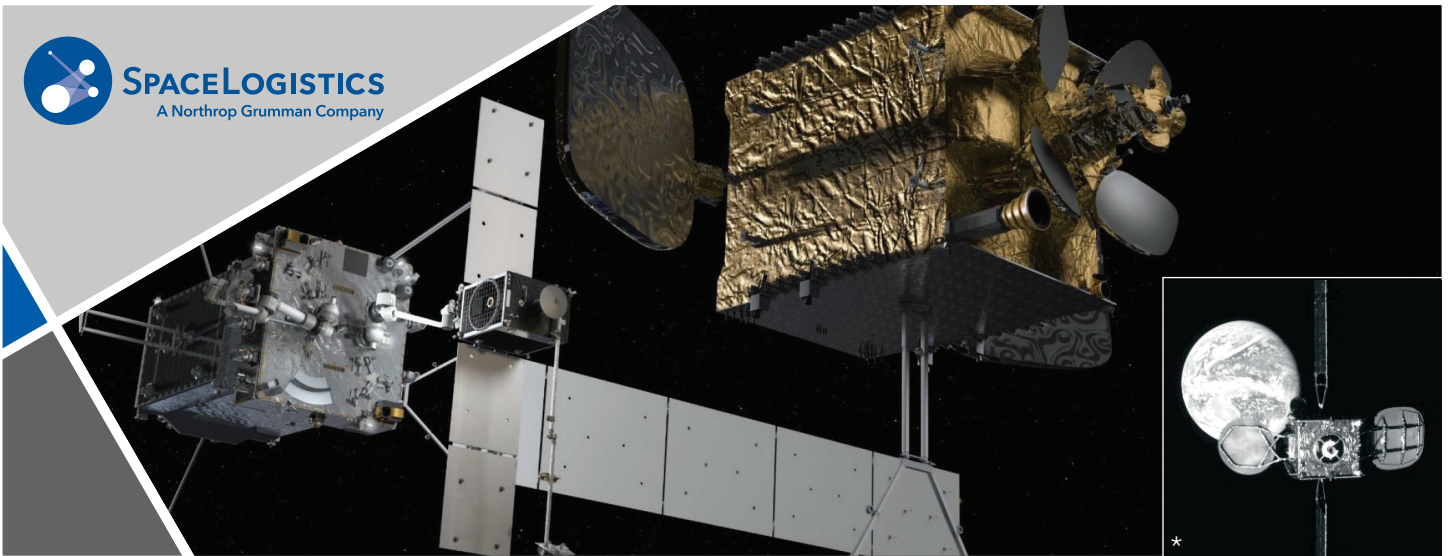




SPACELOGISTICS
A Northrop Grumman Company



ON-ORBIT SERVICE AND SUSTAINMENT

Extending the Life, Capabilities and Value of Your Satellite Investment

Satellite technologies cost millions to develop and put into orbit. But the lifetime return on that investment is ultimately limited by the amount of fuel it carries, even if the rest of its systems still function perfectly. The Mission Extension Vehicle (MEV) was designed to dock with and service a client satellite running low on fuel, taking over the attitude and orbital maintenance and extending its useful life.

In 2020 and 2021, Space Logistics' MEV-1 and MEV-2 docked with Intelsat's IS-901 and IS-10-02 satellites, providing pioneering on-orbit life extension services. Today, our award-winning MEVs continue to provide propulsion and pointing control for their client satellites, extending the satellites' revenue generation capabilities and life span by 25 percent.

With second and third generation systems already in development and planned launches in 2024, our services will expand to include on-orbit repairs, upgrades, refueling, debris removal, and on-orbit assembly and manufacturing.

About SpaceLogistics


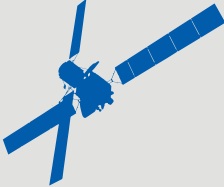


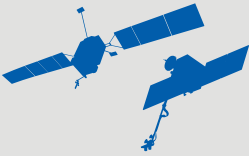





SpaceLogistics, a Northrop Grumman company, is the global leader in the development and deployment of on-orbit satellite servicing systems and the first and only company performing on-orbit servicing for commercial GEO satellites. Our planned series of vehicles will extend service life, provide enhanced capabilities and enable future missions for a variety of customers.

* View of Intelsat 901 as MEV-1 prepares to dock.

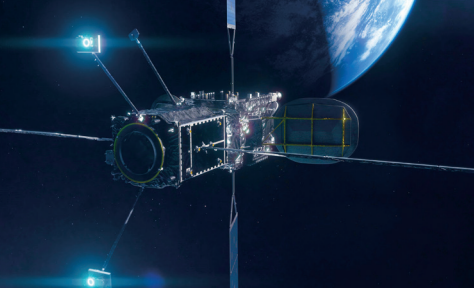
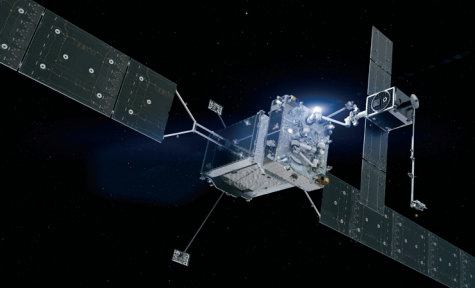

Customer Benefits:

- Prolongs revenues by extending satellite life
- Improves financial performance
- Defers capital expenses
- Breaks down barriers to new markets
- Gains flexibility to adapt to changing market conditions
- Redeploys satellites to start new orbital roles
- Protects current revenue streams by creating on-orbit backup
- Protects satellite revenues from procurement delays and launch failures
- Manages risk of transition to new technologies
- Provides recovery options from on-orbit anomalies

SpaceLogistics Servicing Roadmap

 <p>Today</p> <p>Life Extension Services</p> <p>Mission Extension Vehicles (MEVs) docked with satellites to provide maneuvering and pointing control (for up to 15 years).</p> 	  <p>Launch in 2024</p> <p>Robotic Satellite Servicing</p> <p>Mission Robotic Vehicle (MRV) provides on-orbit augmentation, inspection and repair capabilities, as well as installation of Mission Extension Pods (MEPs)</p> 	  <p>2025+</p> <p>Refueling and GEO Active Debris Removal</p> <p>Mission Refueling Pods (MRPs) and Depots refuel compatible* spacecraft in GEO.</p> <p>Removal of debris from vicinity of high value assets.</p> 	 <p>2030+</p> <p>On-orbit Assembly and Manufacturing</p> <p>Mission Assembly and Repair Vehicle (MARV) manufactures and assembles spacecraft in-orbit.</p> 
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*We support industry standard open architectures to maximize the number of compatible spacecraft that can be serviced.

		
<p>MEV</p> <p>Delivered as a service, the MEV takes over the attitude and orbital maintenance for a client satellite. It is designed to service multiple client satellites, carrying fuel for a planned 15+ year service life.</p> <p>MEV Capabilities:</p> <ul style="list-style-type: none"> • Station keeping • Attitude control • Relocation • Inclination reduction • Remote inspections 	<p>MRV</p> <p>Launching in 2024, the MRV incorporates a robotic module in place of the existing docking system of the MEV. The primary mission of the MRV is to install MEPs on client satellites.</p> <p>MRV Capabilities:</p> <ul style="list-style-type: none"> • Robotic inspection • Augmentation • Relocation • Repair • Active debris removal • Refueling 	<p>MEP</p> <p>Sold as a product, the MEP is a small, customer-owned, customer-controlled propulsion augmentation device that uses electric propulsion to provide orbit control and momentum unloading for client satellites already on-orbit. Once installed, the MEP can provide six years of life extension for a 2,000 kg satellite.</p> <p>MEP Capabilities:</p> <ul style="list-style-type: none"> • Station keeping • Relocation • Momentum unloading

Pioneering the Future of Space

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