Northrop Grumman proudly introduces its Mission Extension Vehicle (MEV) spacecraft designed for satellite servicing and space logistics. The MEV spacecraft provides rendezvous, proximity operations and docking features to enable a keep-it-simple approach to satellite life extension.

Benefits
Our MEV is specifically designed to fit operators’ business models, as well as their technical requirements. The simplicity and cost-effectiveness of this product provides operators with access to new markets and new opportunities — and protects asset value. The MEV provides operators with opportunities to improve financial performance, better manage cash flows, break down barriers to enter new markets and reduce risks by:

- Extending satellite life to prolong revenues or defer capital expenses
- Redeploying satellites to start new orbital roles
- Creating in-orbit backup to protect revenues
- Protecting satellite revenues from procurement delays and launch failures

MEV Bus
- Full 6-DOF operational control
- Redundant RPO&D sensor suite
- Docking mechanisms to interface with standard liquid apogee engines and launch adaptors
- Semi-autonomous rendezvous and proximity operations
- Hi and low rate down link for real-time ground operator situational awareness
- Hybrid chemical and electric propulsion systems
- Electric propulsion thrust vector control for station keeping and momentum management
- Significant delta-V capability
- High precision star trackers and momentum wheel attitude control
- Redundant and high reliability 15+ year design life
- High heritage derived from GEOStar™, Cygnus™ and other Northrop Grumman programs
- Significant hosted payload capability
How It Works

Our Mission Extension Vehicle (MEV) is based on the GEOStar-3™ bus that is modified to safely rendezvous and dock with an orbiting satellite in the geosynchronous orbit. To do so, a suite of integrated proximity sensors is used to reliably and safely rendezvous with the client satellite. The MEV then utilizes a simple mechanical docking system that attaches to existing features on the client satellite creating a firm connection between the MEV and the client satellite. This docking system is compatible with an estimated 80% of all geosynchronous satellites on orbit today.

Once docked, the MEV will take over the attitude and orbit maintenance of the combined vehicle stack to meet the pointing and station keeping needs of the customer. When the customer no longer requires the service, the MEV will undock and move away to begin service for the next customer.

The MEV provides a 15-year design life and sufficient fuel to enable well in excess of 15 years of station kept life while docked with a typical 2000 kg geosynchronous satellite. The rendezvous, proximity and docking systems of the MEV allow for numerous dockings and undockings during the life of the MEV.

Payload:

- Docking Mechanism, Stanchions, and illumination system
- Optical IR and laser-based sensor suite for RPO
- Electric Propulsion Modules (2)
- 10kW Solar Arrays (2)
- TCR Comm Boom
- GEOStar Core Structure