The Cygnus advanced maneuvering spacecraft is being developed by Orbital to demonstrate cargo delivery services under a NASA Commercial Orbital Transportation Services (COTS) Space Act Agreement. In addition to the COTS development and demonstration program, Orbital will utilize the Cygnus to perform the ISS resupply flights under the Commercial Resupply Service (CRS) contract. This NASA contract authorizes eight missions between 2012 and 2015 carrying approximately 20,000 kg of cargo to the ISS as well as disposal of ISS waste.

The Cygnus system is a low-risk design incorporating elements drawn from Orbital and its partners’ existing, flight-proven spacecraft technologies. Cygnus consists of a common service module and a pressurized cargo module. Cygnus will carry crew supplies, spares and scientific experiments to the ISS.

The service module incorporates avionics systems from Orbital’s flight-proven LEOStar™ and GEOStar™ satellite product lines plus propulsion and power systems from our GEOStar communications satellites.

The pressurized cargo module is based on the Multi-Purpose Logistics Module (MPLM), developed by Thales Alenia Space for NASA.
Cygnus

Specifications

**Service Module**
Heritage: GEOStar™ Bus, LEOStar™
Power Generation: 2 fixed wing solar arrays, ZTJ Gallium Arsenide cells
Power Output: 3.5 kW (sun-pointed)
Propellant: Dual-mode N₂H₄/MON-3 or N₂H₄

**Pressurized Cargo Module**
Heritage: Multi-Purpose Logistics Module
Total Cargo Mass: 2,000 kg Standard / 2700 kg Enhanced
Pressurized Volume: 18.9 m³ / 27 m³
Berthing at ISS: Node 2 Common Berthing Mechanism (CBM)

Space Transportation System Architecture

Key Contacts
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