

Overview

- The purpose of the Orbital Express (OE) Demonstration System is to demonstrate the operational utility, cost effectiveness, and technical feasibility of autonomous techniques for on-orbit satellite servicing.
- The specific objectives of OE are to develop and demonstrate on orbit:
 - An autonomous guidance, navigation, and control system.
 - Autonomous rendezvous, proximity operations, and capture.
 - Orbit fluid transfer between a depot/serviceable satellite and a servicing satellite.
 - Component transfer and verified operation of the component.
 - A nonproprietary satellite servicing interface specification.
- OE will accomplish these objectives by launching two satellites simultaneously into a 492-km circular orbit at 46-deg inclination.
 - Autonomous Space Transfer and Robotic Orbiter (ASTRO), which is the servicing satellite.
 - Next Generation Satellite/Commodity Spacecraft (NextSat/CSC), which functions as the satellite being serviced by ASTRO and as a supply depot for ASTRO.
- Once on-orbit, eight scenarios will be conducted. Mission duration will be 3 months, and the spacecraft are certified for a mission life of 1 year.