

SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS (D2)
Future Space Transportation Systems Verification and In-Flight Experimentation (6)

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ADVANCED RENDEZVOUS, PROXIMITY OPERATIONS AND DOCKING (RPOD) STORRM
FLIGHT TEST

Abstract

The Sensor Test for Orion RPOD Risk Mitigation (STORRM) relative navigation sensor suite has been developed to provide risk reduction and technology advancement for space rendezvous, proximity operations and docking (RPOD) applications. RPOD has been identified as a critical element of many of NASA's future missions, and the STORRM sensor suite has been developed to provide a highly reliable, compact, lightweight solution for human and robotic mission applications. The STORRM detailed test objective (DTO) includes the flash LIDAR vision navigation sensor and the high resolution docking camera to execute RPOD from 15 km range to docking under all lighting conditions. The suite provides navigation data, as well as situational awareness video. The flight test includes approaches to the International Space Station via the two primary corridors (Rbar and Vbar), ensuring that mission success, crew safety are addressable by testing over a range of geometric and lighting considerations. The paper will provide progress and performance results associated with the sensor suite and the DTO, scheduled for mid-2010.