

HUMAN SPACE ENDEAVOURS SYMPOSIUM (B3)
ISS Operations and Utilization (3)

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JAPANESE EXPERIMENT MODULE REMOTE MANIPULATOR SYSTEM (JEMRMS)
OPERATIONS FOR HTV-1 MISSION

Abstract

October, 2009. One new type of rocket has been launched from Japan to the Internal Space Station (ISS). Name is the H-II Transfer Vehicle-1 (HTV-1) that it was carried by the rocket. Two payloads attached on the Exposed Palette (EP) were installed in HTV-1. After HTV-1 docking to ISS by the Space Station Remote Manipulator System (SSRMS), EP with two payloads has unberthed from HTV-1 by SSRMS. Then, handed off EP from SSRMS to Japanese Experiment Module (JEM) (also known as "Kibo") Remote Manipulator System (JEMRMS). After that, two payloads on the EP has transferred on the JEM Exposed Facility (JEF). JEMRMS operations for HTV-1 mission were perfectly completed per timeline. However, not only the success but also a lot of trouble occurs in the JEMRMS operation for 1.5 years. We updated JEMRMS software step-by-step from the viewpoint of trouble shooting and the operability improvement for HTV-1. Moreover, we discussed many times with astronauts for more operability improvement, and efficient operation methods not to think in the design phase were taken. These are the results that we have efficiently performed operations preparations and real time operations based on the Space Shuttle mission experience and flight controller/Astronauts training result. This time, we introduce overview of the JEMRMS operations for the HTV-1 mission, following key point of Operation preparation for efficient operation and future operation plan of JEMRMS.

1. Experiences at the Space Shuttle Mission for JEMRMS system design and operation preparations
2. JEMRMS procedure standard
3. Crew training and feed back to procedures
4. Flight Controller and Astronauts training
5. Emergency Stop Avoidance
6. Hazard Report Updating for efficient operation
7. Flight Software Updating
8. Operation Tool development