

SPACE OPERATIONS SYMPOSIUM (B6)
Human Spaceflight Operations Concept (1)

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THE RESULTS OF JEM OPERATIONS CONTROL

Abstract

The overview of JEM(Japanese Experiment Module; KIBO) Operations Control, such as the structure of JEM Flight Control Team, tools and products used in JEM operations and the trainings for JEM flight controller team that are prepared to conduct efficient operation are introduced in this document. At the latter part of this document, also describes experiences and lessons learned from JEM operations since flight 1J/A launched in March, 2008 are introduced.

The overview of JEM operations control including structures of JEM Flight Control Team is as below. JEM system realtime operations are performed by JEM Flight Control Team (JFCT). JFCT is consist of positions such as JEM Flight Director (J-FLIGHT) that commands the operations, System officer (SENIN) that support the flight director during critical operation phases, Power, Communication, Control Officer (CANSEI) and Thermal, Environment, Experiment Support System Officer (FLAT) that control JEM system, Realtime operational plan officer (J-PLAN) that manages realtime operation schedules and develops plans for realtime operations, Communication Officer for astronauts (J-COM), Robotics Officer (KIBOTT), Ground System Officer (TSUKUBA-GC), JAXA EVA that is in charge of Extravehicular Activity and ARIES that is in charge of Intra vehicular Activity. The members of JEM Flight Control Team are needed to be certified before being on-console in the realtime operation, after taking trainings for each positions and Joint trainings such as simulations with other International Partners or assigned astronauts. This document also describes the overview of the trainings for JEM Flight Control Team. JEM Flight Control Team performs realtime operations with realtime operations products such as procedures called ODF (Operations Data File), Flight Rules that describe rules for realtime operations, and OIP (Operations Interface Procedure) that describes Interface coordination between international partners during realtime operations.

With the structure shown above, JEM realtime operation has been conducted since the flight 1J/A that ELM-PS (Experiment Logistics Module -Pressurized Section) was launched in March, 2008, flight 1J that PM (Pressurized Module) and JEMRMS (JEM Remote Manipulator System) were launched in June, 2008, to the flight 2J/A that EF (Exposed Facility) and ELM-ES (Experiment Logistics Module - Exposed Section) were launched in the middle of 2009. The experiences and lessons learned obtained through these JEM realtime operation will be introduced for future operations.