

HUMAN SPACE ENDEAVOURS SYMPOSIUM (B3)
Sustainable Operations of the ISS - Joint Session of the Human Space Endeavours and Space Operations
Symposia (4.-B6.6)

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RELIEVING CREW STRESS FROM STOWAGE ISSUE AND REDUCING VOLUME OF ON-ORBIT
SPARES ON ISS

Abstract

Six crew members on ISS sometimes need to spend much their time to fix core system problem such as exercise equipment, water processing system, and Toilet system. This bears upon the time to perform Space Science experiments and/or ISS system operations.

Furthermore it increases that stowage volume for on-orbit spare parts for these core systems.

Deficiency of the stowage volume makes crew uncomfortable to live there. It also makes difficult situation of finding stowage items. The best way to reduce the volume of on-orbit spare is to improve reliability of core system equipments. However this needs a lot of system improvement and takes cost and time. We have several things to do in addition to improve core system reliability to less crew time to find items easily. JAXA is now studying how we can improve Flight Controllers supports to find things crew needs from the ground.

In this manuscript, JAXA introduces two effective approaches to minimize crew time for finding items and to reduce the stowage volume. At first we review current ISS system operations which tasks to impact crew task for accomplishing science experiment and scheduled system tasks. After that, systematic approach is discussed how Flight Controllers on the ground can support crew member to find things.

At the last, we will show the new Replacement and Recovery concept for JAXA new improved Ethernet hub which intend to improve the stowage utilization.