IAA Study Group Status Report

Responsible Commission:

Commission 3

Study Number and Title:

SG3.25, The Maintainability and Supportability of Manned spacecraft in Deep Space

Short Study Description (repeat from Study Group Proposal):

Aiming at characteristics of manned exploring in deep space about long period, considering roundly the problems faced to solve with maintenance and repairs, spares carrying and supplying, reliability and fault-tolerant redundant of manned spacecrafts in deep space, carrying out analysis of maintainability and supportability with different strategies, forming multi-parameter optimization design; based on the analysis results, research the implementation of maintainability and supportability with new technologies, providing different solutions and schemes.

Progress in past six months:

- Considering system parameters about the Weight, mission time, and technical maturity etc., system models have been made. Initial system optimization has been carried out that based on completing the general comparison of advanced propulsion systems and advanced ECLSS systems.
- To research the Martian atmosphere comprehensive application
  - The feasibility analysis of decreasing the mass of Mars spacecraft by applying Martian atmosphere.
  - The technology of applying the Martian atmosphere as propellant.
- To research the technology of maintenance, based upon robotic assist.

Website Study Information update: (please give any update regarding Study Group Membership, documents, Study Plan and Schedule):

Please update Study Group Membership, the specific staff and the contact information could be seen on next page.

The study plan has been executed according to the original plan.
Please update status reports at all stages and a document submitted in Sept. 2017.

Issues requiring resolution? (recommend approach):
Members/Participants from other space faring nations like Russia, USA, Europe, Japan, India are important for wide acceptability of the contents. We already send email to some experts, and we should strengthen communication to IAA Office for collecting experts' information from IAA website.

Product Deliveries on Schedule? (If modified explain rationale):
No.

Study Team Member Changes? (List any Study Team Members that you wish to discontinue, and provide names plus contact coordinates of any Members you wish to add on the second page of this Study Update form.) Note: Complete contact information including email, tel. and fax must be provided for all additions. Only Members with complete contact information will be listed and receive formal appointment letters from the IAA Secretariat.)
See next page.

Name of person providing Study Group Status (Study Group Chair or Co-Chair):
YANG Hong

Status Report Date:
28/02/2018

Study Team Membership Changes

Effectivity Date:

20/09/2016

Discontinue:

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