HUMAN SPACE ENDEAVOURS SYMPOSIUM (B3)
How Can We Best Apply Our Experience to Future Human Missions? (2)

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INTERNATIONAL SPACE STATION (ISS) LESSONS LEARNED AND THEIR INFLUENCE ON PREPARATIONS FOR HUMAN EXPLORATION BEYOND LOW EARTH ORBIT

Abstract

As the end of the International Space Station (ISS) assembly phase approached, the ISS Multilateral Control Board took the opportunity to capture lessons learned from the design, development and initial stages of operation of the ISS. This work culminated in July 2009 with the release of International Space Station Lessons Learned as Applied to Exploration. The document contains a rich collection of technical and programmatic lessons learned spread across 7 categories. The categories Mission Objectives, Architecture, Partnership Structure and Coordination, External Communications, Operations, Utilization and Commercial Involvement provide many useful insights for agencies planning partnerships to undertake exploration missions beyond low earth orbit. It highlights the importance of developing a long-term shared vision through the early identification of common goals, common messaging on the importance of the partnership to stakeholders, and the importance of finding roles for each partner that are consistent with capabilities and long term interests. It also identifies strategies for ensuring an exploration program is robust in a changing political and technical risk environment. The ISS Program thrives today as an example for human exploration programs because of the strategies employed over time to build a partnership which is resilient in a changing environment.

With these documented lessons learned in hand, and the experiences of people who have spent years working on ISS program, the International Space Exploration Coordination Group (ISECG) has ensured that these valuable lessons are reflected in the work to build a coordinated international strategy for future human exploration of places like the moon, asteroids and Mars.

The ISECG was established in response to "The Global Exploration Strategy: The Framework for Coordination" developed by fourteen space agencies. The ISECG enables interested agencies to develop the products considered important to inform their individual decision making, enabling decisions to be made in a coordinated manner. In developing the ISECG Reference Architecture for Human Lunar Exploration and the Global Exploration Roadmap participating agencies have reflected on the appropriate lessons from ISS to enable a more robust future exploration scenario. This paper will review the ISS Lessons Learned and share insights into how they have influenced the early planning for human exploration beyond low earth orbit. It will provide additional thoughts on the importance of building on the ISS and its legacy for enabling the challenging international exploration missions of the future.

For more information on the ISECG please consult www.globalspaceexploration.org or contact the ISECG Secretariat at: isecg@esa.int