HUMAN EXPLORATION OF THE MOON AND MARS SYMPOSIUM (A5)
Long Term Scenarios for Human Lunar Presence (2)

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AN INTERNATIONAL STRATEGY FOR HUMAN EXPLORATION OF THE MOON: THE INTERNATIONAL SPACE EXPLORATION COORDINATION GROUP (ISECG) REFERENCE ARCHITECTURE FOR HUMAN LUNAR EXPLORATION

Abstract

The International Space Exploration Coordination Group (ISECG) was established in response to "The Global Exploration Strategy: The Framework for Coordination" developed by fourteen space agencies and released in May 2007. Several ISECG participating space agencies have been studying concepts for human exploration of the moon that allow individual and collective goals and objectives to be met. This 18 month study activity culminated with the development of the ISECG Reference Architecture for Human Lunar Exploration. The reference architecture is a series of elements delivered over time in a flexible and evolvable campaign. This paper will describe the reference architecture and how it will inform near-term and long-term programmatic planning within interested agencies. The reference architecture is intended to serve as a global 'point of departure' conceptual architecture that enables individual agency investments in technology development and demonstration, International Space Station research and technology demonstration, terrestrial analog studies, and robotic precursor missions to contribute towards the eventual implementation of a human lunar exploration scenario which reflects the concepts and priorities established to date. It also serves to create opportunities for partnerships that will support evolution of this concept and its eventual realization.

The ISECG Reference Architecture for Human Lunar Exploration (commonly referred to as the lunar gPoD) reflects the agency commitments to finding an effective balance between conducting important scientific investigations of and from the moon, as well as demonstrating and mastering the technologies and capabilities to send humans farther into the Solar System. The lunar gPoD begins with a robust robotic precursor phase that demonstrates technologies and capabilities considered important for the success of the campaign. Robotic missions will inform the human missions and buy down risks. Human

exploration will start with a thorough scientific investigation of the polar region while allowing the ability to demonstrate and validate the systems needed to take humans on more ambitious lunar exploration excursions.

The ISECG Reference Architecture for Human Lunar Exploration serves as a model for future cooperation and is documented in a summary report and a comprehensive document that also describes the collaborative international process that led to its development. ISECG plans to continue with architecture studies such as this to examine an open transportation architecture and other destinations, with expanded participation from ISECG agencies, as it works to inform international partnerships and advance the Global Exploration Strategy.

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