

Exploration of Near Earth Asteroids (06)
Human Exploration of NEAs (1)

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ASTEROID NEXT: A VIEW TO THE ROLE OF ASTEROID MISSIONS IN THE 2ND ITERATION
OF THE ISECG GLOBAL EXPLORATION ROADMAP**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. This GES Framework Document recognizes that preparing for human space exploration is a stepwise process, starting with basic knowledge and culminating in sustained human presence in space.

The first iteration of the ISECG Global Exploration Roadmap (GER) has been released in September 2011. Its development focused on identifying the overall framework, consisting of the common goals for exploration, the long-range strategy and associated optional mission scenarios and Design Reference Missions (DRM's) as well as near-term areas for coordination and cooperation. It also provided an opportunity for agencies to share exploration plans and look for synergies. One feasible pathway defined by agencies participating in development of the GER is called “Asteroid Next”. By exploring near Earth asteroids, we take significant steps towards preparing the propulsion and habitation technologies and capabilities needed for deep space exploration and ultimate missions to Mars. The second iteration of the GER is planned for late 2012 and interagency work has already been started. Updates of the GER will reflect the ongoing evolution of agency's exploration policies and plans, informed by agency individual and coordinated analysis activities that are relevant to various elements of the GER framework as well as coordinated stakeholder engagement activities.

Specific areas which will be further developed in the 2nd iteration include:

- A further refinement and definition of the optional mission scenarios in areas related to near-term DRM's;
- A reflection on the importance of asteroid survey and characterization efforts;
- The identification of agencies plans for technology developments enabling the implementation of the ISECG DRM's; this assessment will identify major gaps, opportunities for cooperation and coordination in developing and demonstrating technologies as well as opportunities for inserting new technology into the mission

concepts. • The definition and prioritization of strategic knowledge gaps which reflect information helpful for preparation of the ISECG DRM's as well as an assessment of the contributions of planned robotic missions in addressing these gaps.

This paper will provide early insight in envisaged updates of the 2nd version of the GER and in particular assess the implications on the "Asteroid Next" mission scenario included in the GER.