SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND DEVELOPMENT (D3)
Strategies & Architectures as the Framework for Future Building Blocks in Space Exploration and Development (1)

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NASA LUNAR CATALYST INITIATIVE: ENABLING COMMERCIAL SERVICES TO THE LUNAR SURFACE

Abstract

The National Aeronautics and Space Administration (NASA) recognizes that private-sector investment in technologies intended to enable commercial lunar activities has been increasing, prompted by the Google Lunar X-Prize and other new commercial opportunities. Consistent with the National Aeronautics and Space Act's direction to seek the fullest commercial use of space and the National Space Transportation Policy's goal of facilitating a healthy and competitive U.S. commercial space transportation industry, NASA wants to encourage these activities and enable their success to cultivate increased innovation and entrepreneurship.

Accordingly, NASA's Lunar Cargo Transportation and Landing by Soft Touchdown (Lunar CATALYST) initiative seeks to encourage the development of reliable and cost-effective commercial robotic lunar lander capabilities by the U.S. private-sector. This initiative also supports the internationally shared space exploration goals of the Global Exploration Roadmap (GER) that NASA and 11 other space agencies around the world released in August, 2013. The GER acknowledges the value of public-private partnerships and commercial services to enable sustainable exploration of asteroids, the moon and Mars. Lunar CATALYST is a natural extension of previous agency activities such as the Commercial Orbital Transportation Services (COTS) capability development initiated in 2006, Commercial Crew development initiated in 2010, the Innovative Lunar Demonstrations Data (ILDD) contracts initiated in 2010, and a Robotic Lunar Lander Request for Information issued in 2013.

To enable this initiative, NASA issued a competitive announcement in January, 2014, requesting U.S. private sector proposals to partner with NASA in the development of robotic lunar lander capabilities. As a result, NASA anticipates entering into one or more no-funds-exchanged Space Act Agreement-based partnerships. NASAs contribution to each partnership could include technical expertise, access to test facilities, equipment loans, and software. The resulting capabilities could support commercial activities on the moon while enabling new science and exploration missions of interest to NASA and the larger scientific and academic communities.

This paper provides an overview of the Lunar CATALYST initiative, selection process, and outcomes during the initial phase after the awards, which are anticipated in May, 2014. This initiative is managed by the Advance Exploration Systems (AES) Division within the Human Exploration and Operations Mission Directorate at NASA Headquarters. AES develops prototype systems and demonstrates key capabilities

to reduce the risk and costs of future human spaceflight missions. AES is pioneering innovative ways to drive a rapid pace of progress, streamline management, enable public-private partnerships, and utilize limited resources and the NASA workforce more effectively.