

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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christopher.jones@nianet.orgA SPACE EXPLORATION STRATEGY THAT PROMOTES INTERNATIONAL AND COMMERCIAL
PARTICIPATION**Abstract**

With NASA's current focus on developing a capability-driven framework to explore cis-lunar space, many factors must be considered in determining what capabilities are most beneficial to explore as many destinations as possible. This paper presents an exploration program that emphasizes cooperation between multiple international and commercial providers to support human exploration in cis-lunar space. Up to 70 percent of total mass launched into Low Earth Orbit (LEO) is propellant used to depart for a given destination. Aggregation of propellant at a gateway facility, when transferred to a large propulsive stage, enables human access to all of cis-lunar space. This infrastructure is also independent of where this aggregated propellant originates. This creates an ideal market for international and commercial providers to launch propellant to the facility, contributing significantly to human exploration beyond LEO. This paper includes a discussion of the type and location of the gateway facility, the anticipated demand for propellant that such a facility would create, and the current supply of potential launch providers.