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GLOBAL SEAPORT DEVELOPMENT: A MODEL FOR FUTURE L2 GATEWAY FACILITY DEVELOPMENT

Abstract

The construction of a facility at an Earth-Moon Lagrange point will enable humans to mature exploration technologies and overcome the challenges of living in the cis-lunar environment. The L2 Lagrange point is an optimal staging area for future missions and would serve as a gateway to human exploration of deep space. To ensure that humans can thrive and maintain a presence at L2, it will be imperative that NASA and its partners, including private industry and international agencies, develop a sustainable strategy.

Ideally, an L2 Gateway has great potential to not only serve as a staging area for exploration missions, but also as a destination for space tourism; provide opportunities for telescope construction and deployment; establish deep-space communication and navigation capabilities; provide emergency facilities for future Lunar explorers; and develop a satellite servicing station, to name a few of the myriad possibilities. Essentially, a sustained human presence in cis-lunar space could create an entirely new market with an endless number of potential customers.

This vision of a thriving hub of activity in cis-lunar space will be dependent on a sustainable strategy for development. Although there is no precedent for the establishment of a deep-space gateway facility, parallels can be drawn from the development of seaports. For centuries, seaports have served as central hubs of economic activity around the world, providing efficient means of transportation of goods and services and catalyzing the development of surrounding communities. The cruise industry is also completely dependent on seaports as destinations, serving as an example for development of the space-tourism industry. In budget constrained environments and an ever-changing political landscape, seaports have been established as, or are turning to, public-private partnerships to ensure continued prosperity. This study will examine the success of public-private partnerships in the development of seaports and propose a similar model for maintaining facilities, managing stakeholders, and encouraging economic activity at L2. Additionally, this paper proposes the establishment of an international port authority to govern and regulate activities at cis-lunar destinations.