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Technology Roadmaps for Space Exploration (09)
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COORDINATING EXPLORATION ROADMAP IMPLEMENTATION WITH AFFORDABLE ACCESS TO SPACE UTILIZING NASA'S HEAVY-LIFT LAUNCH VEHICLE

Abstract

As NASA projects a capabilities-based flight system development strategy for exploration, and roadmaps are used to plan the sequence and evolution of technology and development of associated missions, utilizing NASA's planned heavy lift vehicle may provide the solution for the multitude of payloads needing low cost, economical access to space to fulfill those roadmaps. Furthermore, formulating and incorporating payload accommodations in NASA's heavy lift vehicles will promote affordability and sustainability through serving diverse cargo and payloads and maximizing utilization of vehicle capacities. Payloads include those that address mission-specific objectives and co-manifested payloads that support advances in engineering, technology, science, education, and the like. NASA efforts to help establish and incorporate these assets via a stakeholder utilization-based approach, and coordination with roadmaps and mission concept formulation will be discussed. Co-manifesting processes, design and operations concepts, and payload-to-vehicle interface requirements derivation through functional analysis and design reference mission analysis to facilitate payload development, operations cost reduction, and access to space utilizing NASA's heavy lift vehicles are amongst the programmatic and technical elements to be presented.