SPACE PROPULSION SYMPOSIUM (C4)
Electric Propulsion (4)

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OVERVIEW OF THE DEVELOPMENT OF THE ADVANCED ELECTRIC PROPULSION SYSTEM
(AEPS)

Abstract

The Asteroid Redirect Robotic Mission (ARRM) is a candidate Solar Electric Propulsion Technology Demonstration Mission (SEP TDM) whose main objectives are to develop and demonstrate a high-power solar electric propulsion capability for the Agency and return an asteroidal mass for rendezvous and characterization in a companion human-crewed mission. This high-power solar electric propulsion capability, or an extensible derivative of it, has been identified as a critical part of an affordable, beyond-low-Earth-orbit, manned-exploration architecture. Under the NASA Space Technology Mission Directorate the critical electric propulsion technologies are being developed. The NASA in-house technology developments have been transitioned to Aerojet via competitive selection under the Advanced Electric Propulsion System (AEPS) contract. This paper presents the conceptual design and status of the ARRM ion propulsion system, an overview of the AEPS contract hardware development, and overview of the continued NASA in-house risk reduction activities supporting both the AEPS contract development and ARRM.