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THE DYNETICS HUMAN LANDING SYSTEM AND STIMULATING THE LUNAR ECONOMY

Abstract

NASA's exciting vision for human space exploration and the Artemis Program will start the era of sustained human exploration of the solar system, starting with missions to the Moon and Mars. Artemis will return humans to the Moon to advance science, master technologies associated with lunar resource utilization, and prepare for future human missions to Mars. Dynerics is a commercial partner to NASA for design, development and utilization of the Dynerics Human Landing System (DHLS). As one of NASA's commercial partners, Dynerics has established a vision and strategy to promote large scale usage of the DHLS to support NASA and other customers. This paper will describe that vision and strategy, and a status of ongoing activities.

In addition to delivering crew to the lunar surface, the DHLS has been designed to carry secondary payloads. Secondary payloads can be deployed on a lunar trajectory or in lunar orbit. They can be delivered to the lunar surface. Certain secondary payloads will benefit from the coordination with human presence on the surface. A variant of the DHLS will deliver large cargo items to the lunar surface for NASA and commercial customers. This paper will discuss capabilities for delivery of primary and secondary payloads, as well as supporting activities.

Team Dynerics has established a vision for lunar exploration and utilization. Key aspects of this vision include establishment of a propellant depot in cislunar space, initially supplied from Earth. Dynerics will purchase propellants and other consumables from the depot to support our reusable lander. As lunar in-situ resource utilization capabilities come on line, propellant produced on the lunar surface can be delivered to the orbiting depot. The DHLS will also purchase liquid oxygen on the lunar surface. By establishing and pursuing this vision, Team Dynerics will drive development of the lunar economy lowering the cost of DHLS as well as other reusable Artemis capabilities.