

Title:

Amine Swingbed Payload Technology Demonstration

Prepared by:

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Abstract:

The Amine Swingbed Payload is a technology demonstration of an amine-based carbon dioxide (CO₂) and water vapor (H₂O) removal system in the U.S. Lab onboard the International Space Station (ISS). The technology utilizes the Carbon dioxide And Moisture Removal Amine Swingbed, or CAMRAS, which is the baseline technology for controlling CO₂ and water vapor in the habitable spacecraft for Orion's Multi-Purpose Crew Vehicle (MPCV). For testing on the ISS, the payload also employs water-saving and air-saving subsystems to reduce resources normally vented to space vacuum. This presentation will describe the physical design of the payload, the operation and performance results of the payload during its on-orbit tests between May 2013 and February 2014, and future plans for the payload. Troubleshooting efforts and the resolution of specific anomalies encountered during the initial operation of the payload are also discussed.