NASA Development of Hardware for Life Support Systems in Cis Lunar and Surface Habitats

Imelda C. Stambaugh, NASA Johnson Space Center, Houston, TX 77058 USA

Sustained human presence requires the ability to survive with a minimal Earth supply chain and minimal communications from Earth. NASA is working on mission platforms to aggregate ECLS functions into a cis lunar and lunar surface architectures to demonstrate Mars forward capabilities and reduce the risk for human missions to Mars. This means the Environmental Control and Life Support (ECLS) technologies in the vehicle architecture will need to recover air and water from human and consumable waste products to support humans for short and long duration missions. NASA is developing ECLS technologies for Air Revitalization, Water Recovery and Management, Waste Management and Environmental Monitoring. Implementation of these technologies on microgravity and partial gravity platforms will collect component and system data on manned missions to increase the reliability needed for mission beyond Low Earth Orbit.