

TASK 396: Mapping Life Support System Functions and Technologies to Commercial Spaceflight Applications

PROJECT AT-A-GLANCE

- UNIVERSITY: University of Colorado at Boulder
- PRINCIPAL INVESTIGATOR: Dr. David Klaus
- STUDENT RESEARCHERS: Kaitlyn Hauber & Hunter Hatchell

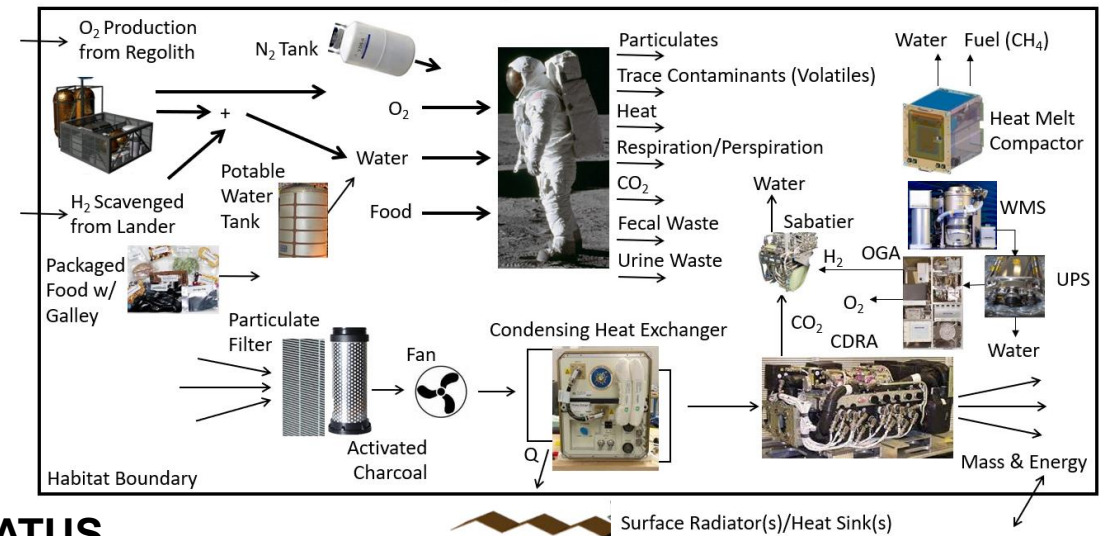
RELEVANCE TO COMMERCIAL SPACE INDUSTRY

- Augments and builds upon *FAA Environmental Control and Life Support Systems (ECLSS) for Flight Crew and Space Flight Participants in Suborbital Space Flight* (Version 1.0, Apr 2010)

STATEMENT OF WORK

- Define basic human physiological needs across a variety of industry standards (FAA, NASA, OSHA, FDA, etc.)
- Characterize corresponding functional ECLSS requirements
- Construct representative ECLSS models for a range of spaceflight profiles (from suborbital to planetary surfaces)
- Identify and characterize candidate ECLSS technologies (including vendors) to inform future trade studies
- Provide considerations for design validation and compliance verification acceptance testing

Lunar Surface Model ECLSS



STATUS

- Klaus, D. and Hauber, K. (2022) *Mapping Life Support System Functions and Technologies to Commercial Spaceflight Applications*. IEEE Aerospace Proceedings (978-1-6654-3760-8/22 paper no. 2531)
- Hauber, K. and Klaus, D. (2021) *Mapping Life Support System Functions and Technologies to Commercial Spaceflight Applications*. (poster) 50th Int'l Conference on Environmental Systems (ICES)
- Final Report submitted to FAA AST on Dec 17, 2021

FUTURE WORK

- Task completed/closed out, potential for CSII follow on activities