

University of Stuttgart Institute of Space Systems



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Task Description Bachelor's Thesis

Development of a concept for a Common Cabin Air Assembly for the IRS Life Support System Laboratory

Motivation:

The next generation of human space exploration missions will take crews farther away from Earth than ever before. These missions will necessitate increasingly sophisticated Life Support Systems (LSSs) to ensure astronauts stay alive, healthy and happy.

In order to be able to simulate LSSs at the IRS, a small-scale laboratory is going to be constructed. Apart from a central vacuum chamber the laboratory consists of various subsystems. One of these is the Common Cabin Air Assembly (CCAA), which is currently being used onboard the ISS to control the cabin atmosphere and temperature.

The aim of this thesis is to investigate the functionality of the CCAA and its usage in other research facilities. The CCAA is then designed and adapted for the IRS LSS laboratory. Research should therefore include the working of a CCAA, its implementation as well as requirements for the IRS laboratory.

Task Description:

- Familiarization with CCAA technologies
- Research on the workings of a CCAA and other implementations
- Identification of requirements for the IRS laboratory
- Development of a concept for the CCAA inside the IRS laboratory
- Documentation

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 Start date:
 Choose Date

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