



Task Description Student Assistant

Development of a GUI for the Virtual Habitat (V-HAB) inside MATLAB

Motivation:

The next generation of human space exploration missions will take crews farther away from Earth than ever before. This results in increasingly sophisticated life support systems (LSS) to keep the astronauts alive, happy and healthy. Mission scenarios of this kind therefore require greater autonomy, utilizing modern simulation software for early development and life-cycle support.

The task of the student assistant is to design and develop a Graphical User Interface (GUI) for the Virtual Habitat (V-HAB) simulation. This interface should enable a user-friendly approach to implement Life Support System modules in MATLAB and will be used for the Space Station Design Workshop (SSDW). The student assistant will therefore have the opportunity to supervise their implemented software during the SSDW 2025 and participate in its organization. Further improvements and implementation of feedback after the SSDW is expected.

Task Description:

- Familiarization with V-HAB and User Interface development
- Definition of requirements and constraints for the interface
- Implementation of a GUI for V-HAB
- Evaluation of the software performance
- Support during the SSDW 2025

We are looking for someone who is:

- Reliable & able to work in a team but also independently
- Fluent in English
- Available for about 20h per month
- Experience with MATLAB
- Previous experience with Python and/or Interface development is a benefit

Internal advisor:

Christian Mayer

mayerc@irs.uni-stuttgart.de

Start date:

15.11.2024

Professors at IRS:

Prof. Dr.-Ing. Stefanos Fasoulas (Managing Director) · Prof. Dr.-Ing. Sabine Klinkner (Deputy Director) · Prof. Dr.-Ing. Claas Olthoff · Hon.-Prof. Dr.-Ing. Jens Eickhoff · apl. Prof. Dr.-Ing. Georg Herdrich · Hon.-Prof. Dr. rer. nat. Volker Liebig · Hon. Prof. Dr. rer. nat. Christoph Nöldeke · Prof. Dr.-Ing. Stefan Schlechtriem · apl. Prof. Dr.-Ing. Ralf Srama
BW-Bank Stuttgart · IBAN: DE51 6005 0101 7871 5216 87 · BIC: SOLADESTXXX · VAT-ID: DE 147794196