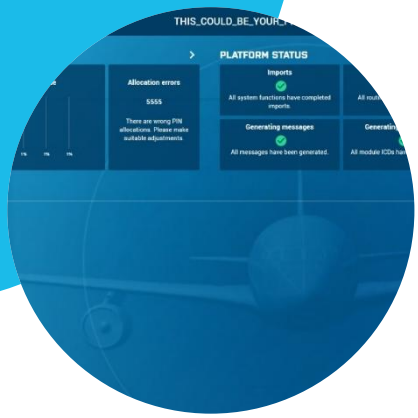
Universität Stuttgart
Institute of Aircraft Systems

AS OF NOW

IMA – Configuration Generation

Student / Research Assistant



We are looking for a student/research assistant to support the PlaCoTo team in the development of the PlaCoTo tool.

If you have experience in programming with Python and would like to learn more about the state of the art in integrated modular avionics and concepts for domain-specific modeling, the PlaCoTo team is the right place for you.

This HiWi position offers the opportunity to work on current IMA research and to contribute to the development of a software tool that is used in the avionics industry.

The workload and hours are freely selectable.

Your tasks:

- Introduction to the PlaCoTo tool
- Modelling of platform architectures in OAAM
- Developing rules for generating ICDs from OAAM models
- Implementation of the rules in Python code
- Testing the generated ICDs on IMA modules

Your profile:

Prerequisite knowledge:

- Programming in Python
- Software development

Knowledge that will be learned during the work:

- IMA architectures
- Domain-specific modeling
- Model transformations

Integrated Modular Avionics (IMA) architectures consists of standardized hardware modules that can host multiple applications with different criticality. The IMA modules must be configured in order to run the applications. Qualified tools generate the load for the modules from the configurations.

The process for creating the configurations is error-prone and resource-intensive. Fore this reason we at the ILS are developing the Platform Configuration Tool (PlaCoTo), a domain-specific modeling tool for the automated generation of configurations from platform architecture models.

PlaCoTo enables the modelling of abstracted platform architectures in the domain-specific language OAAM (Open Avionics Architecture Model). Model transformations generate Interface Control Documents (ICDs) from the platform architecture models.

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