

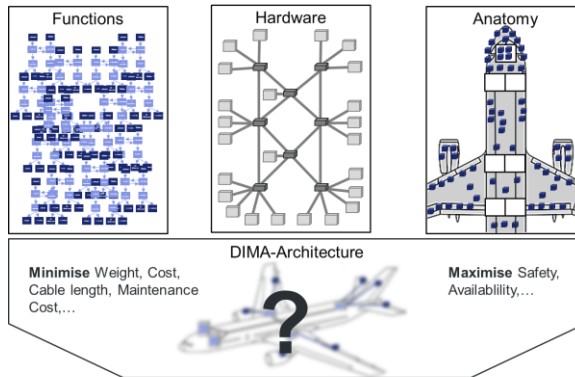
TUHH

Hamburg University of Technology

IMA architecture design

Manual architecture findings for large IMA architectures are difficult. The reason is the growing amount of functions, new IMA hardware and distributed components.

TUHH/FST uses an in-house IMA framework that allows model-based development of IMA architectures. It is based on a meta-model to define avionics architectures that allows to capture relevant parameters and requirements. The model can be used for early design verifications and early evaluation of architectural metrics for validation.



Flexible optimisation routines allow multi-objective optimisations of IMA architectures at different automation level like device / function assignment, device type optimisation or topology optimisation.

ASHLEY Seamless Tool-Chain

Within the context of ASHLEY, both tools have been developed, improved and are being used in within the scope of the VCS demonstrator. They have been integrated into the ASHLEY seamless tool-chain using the ASHLEY Tool Framework (ATF) as shown in the picture on the right side. The Platform Configuration Tool (PCT) plays a central role in the design and integration process.

The Institute of Aircraft Systems Engineering of the Hamburg University of Technology (TUHH/FST) works in the field of avionics since ~10 years. Major topics are tools and methods for IMA architecture optimisation, equipment integration, configuration and simulation.

IMA Configuration Engineering

The scope of IMA configuration engineering is to collect and verify all parameters required to integrate applications on IMA modules. As these are many thousands from different stakeholders, consistency, proper integration and traceability are the key issues.

TUHH/FST has developed a model-based configuration engineering software framework that allows to collect all required parameters at aircraft-, system- and application level, across different types of modules in a distributed configuration process. Powerful validation algorithms allow to visualise and verify these parameters at early stages, before integration takes place to ensure consistency.

