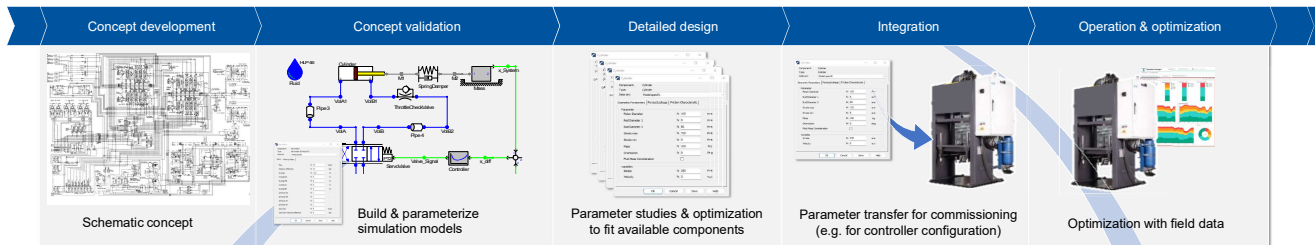


Framework for seamless and interoperable linking of components and simulation models

Malte Becker, M. Sc. (ifas); Raphael Alt, M. Sc. (FLUIDON GmbH)
ifas, RWTH Aachen University, Germany

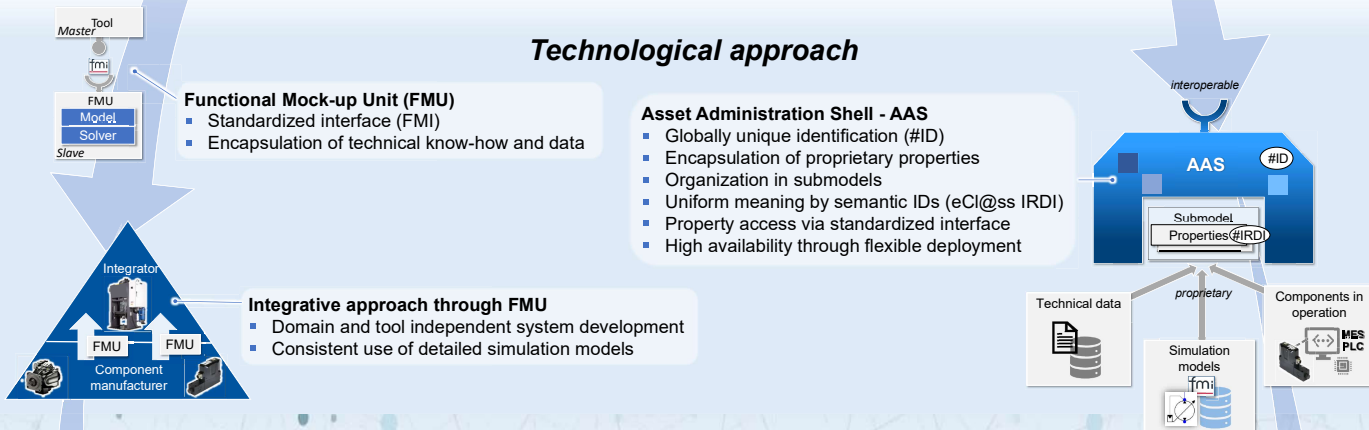
malte.becker@ifas.rwth-aachen.de

Challenges of today's simulation-based engineering



- High effort and prone to errors** in the system development due to
- deficient linking of the development steps
 - deficient linking of components data and simulation models
 - no cross-stakeholder availability of existing technical know-how and data of subsystems

Technological approach



- Functional Mock-up Unit (FMU)**
- Standardized interface (FMI)
 - Encapsulation of technical know-how and data

- Asset Administration Shell - AAS**
- Globally unique identification (#ID)
 - Encapsulation of proprietary properties
 - Organization in submodels
 - Uniform meaning by semantic IDs (eCl@ss IRDI)
 - Property access via standardized interface
 - High availability through flexible deployment

- Integrative approach through FMU**
- Domain and tool independent system development
 - Consistent use of detailed simulation models

BaSys4FluidSim

Framework for a seamless and interoperable linking of components and simulation models

Distributed Co-Simulation

Cross-stakeholder linking of asset data with simulation models along the product lifecycle

