

The DYMASOS Engineering Platform

Challenges

SoS Management Methods

- Distributed, hierarchical architectures
- Complex communication structures

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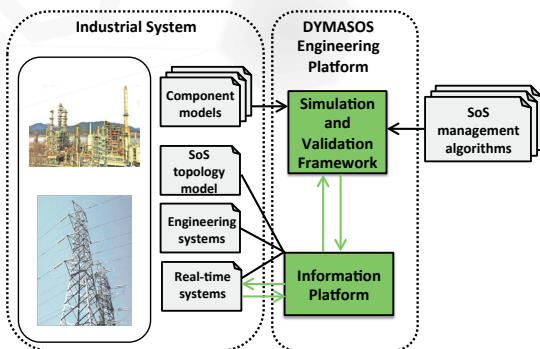
- Model-based validation with **model re-use, model exchangeability, minimal manual effort**
- **Integration with industrial systems**
- **Handling, adaptation, and maintenance** of SoS information

Industrial Application

- Complex hardware and software
- Continuous evolution and reconfiguration

SoS Engineering and Testing

- Engineering data management using structure and information models
- Generation of a SoS simulation model with distributed management
- Simulation-based validation
- Integration of simulation models with real-time systems



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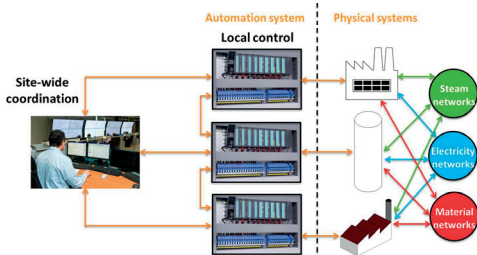
The Simulation and Validation Framework

Systematic integration of management algorithms with Modelica-based simulation models

- Interfaces for SoS management system communication
- Interfaces for the connection of SoS management systems to system models

Main features

- **Generation of the simulation model** based on user-defined structural information
- Support for different **communication architectures**
- Support for **co-simulation** via the FMI interface
- Different **time discretization mechanisms**



Structure of an SoS with distributed management

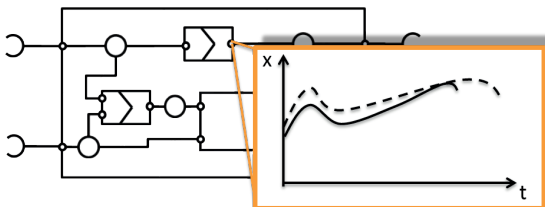
The Information Platform

Consistent SoS structure and information modeling

- **Browser-based** engineering client
- **Workflow-guided** change management

Interoperability and standards

- Based on industrially proven **meta-models**
- Complies with the **CAEX data exchange standard** (IEC 62424)
- Supports the **industrial communication protocol** ACPLT/KS



Example SoS structure and information model