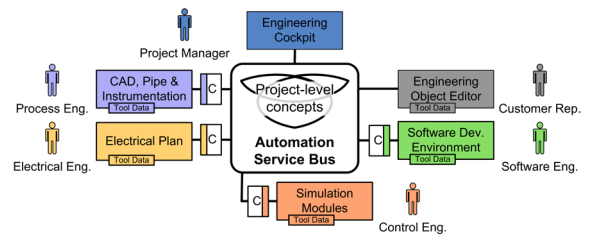


SCADA & Simulation Integration Framework



The effort for integrating simulation modules with SCADA systems to design complex simulation workflows should be reduced. The „Automation Service Bus“® (ASB) enables the efficient combination of simulation modules with a range of relevant tools.

Goal

Simulations for industrial, e.g., chemical, processes, which are not time critical, typically consist of several modules for simulation and access to historical or real-world data.

However, these modules for simulation and data access often were not designed for seamless interaction and take considerable effort and time to connect heterogeneous technologies and data models.

The SCADA & Simulation Framework is to provide an integrated environment for simulators and SCADA systems to enable the efficient design and test of simulations with SCADA systems.

Implementation

The „Automation Service Bus“® (ASB), developed by logi.cals and the CDL-Flex research laboratory at the Technische Universität Wien, enables the fast and efficient definition of traceable tool chains for simulations.

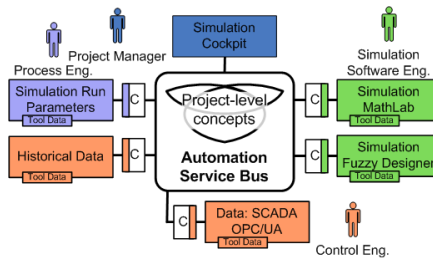
The capabilities of modules for simulation and data access can be described in the language of the domain experts, e.g. a chemical engineer or line operator, and support the control engineer in defining the tool chains and workflows for the simulations faster.

The SCADA & Simulation Integration Framework has been successfully evaluated with real-world simulation use cases for water distribution, electrical network traffic, and passive house design.



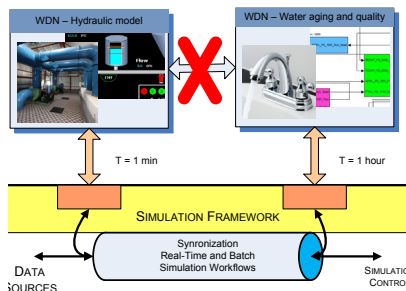
Besides the improvements for re-configuration of available simulation modules, the framework supports the collection of simulation activity data, e.g., input parameters, to enable the exact recreation of historic simulation runs, e.g., for verification and for design experiments.

In the case of designing passive houses the approach allows domain experts to create a new simulation variant even without support from a simulation engineer.



Technical Specification:

- Automation Service Bus®
- Service-oriented architecture/ Layered Domains
- Semantic data model integration, automation ontology



Benefits for customers

- Control engineers can produce tool chains for complex simulations faster (in a few days instead of weeks).
- Domain experts can easily configure coupled simulations.
- Domain experts can trace existing simulation runs exactly.

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