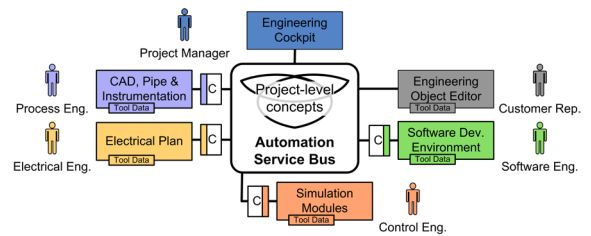# Traceable Tool Chains for Industrial Plant Engineering with AML+ASB

The effort for building quality assured tool chains from heterogeneous software tools from several disciplines should be reduced. The data exchange standard AutomationML (AML) and the integration platform „Automation Service Bus®" together enable the project team to achieve this goal.
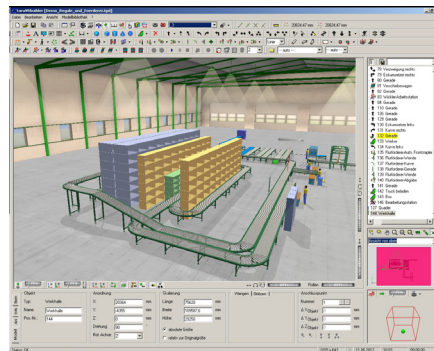
Goal

Quality assured tool chains between heterogeneous software tools are to bridge technical and data representation gaps, which take significant effort and risk to close with makeshift Implementations and informally organized data exchange approaches.

The production and maintenance of tool chains is costly and error prone. Continuous, efficient, and traceable tool chains enable systematic change propagation to minimize defects and risks in the overall project planning. Standard approaches for data exchange and for calling tool functions are to simplify the development and maintenance of traceable and secure data connections.
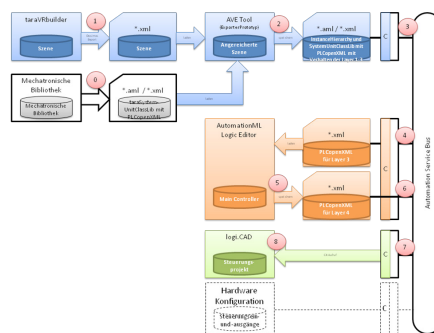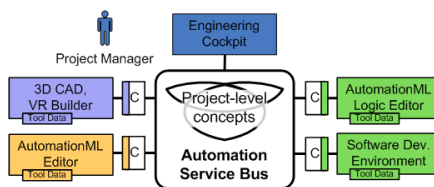
Implementation

The „Automation Service Bus"® (ASB), developed by logi.cals and the CDL-Flex research laboratory at the Technische Universität Wien, enables closing technical and data representation gaps between engineering plans in heterogeneous software tools.

AutomationML (AML) as standard format for data exchange is available as interface format for a growing number of tools.

ASB and AML allow the traceable operation of tool chains for distributed engineering of industrial plants with heterogeneous software tools, since AML files, activities, and pro-

jects can be saved and accessed easily.

The production of tool chains with the data exchange standard AutomationML has been evaluated with the tool providers Tarakos (3D CAD, simulation) and logi.cals (PLC programming).

In addition to formal checks of the XML-based AML files, the approach enables checking the meaning of the Engineering data contained in the AML files.

Benefits for customers

- Domain experts can produce traceable and secure tool chains easily (in a few days instead of weeks).
- Domain experts can produce tool compositions with AML+ASB efficiently.
- The tool chains are for practitioners easy to use.
- Quality manager: clearly trace and check the content of changes to engineering objects.

Technical Specification:

- AutomationML
- Automation Service Bus®
- Service-oriented architecture
- Versioned storage of AutomationML Engineering Data in the Engineering Database
- Semantic Integration of common concepts on project level

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