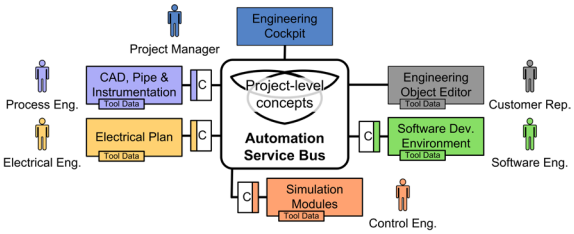
Quality-Controlled Tool Chains



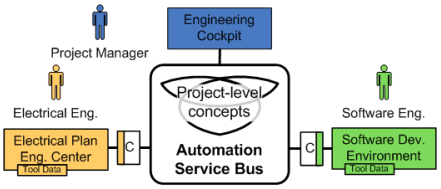
The effort for the quality controlled propagation of changes to engineering plans across tool chains in heterogeneous software tools in several disciplines should be reduced.
The traceable and automated propagation of changed using the „Automation Service Bus“® (ASB) helps the project team to achieve this goal.

Goal

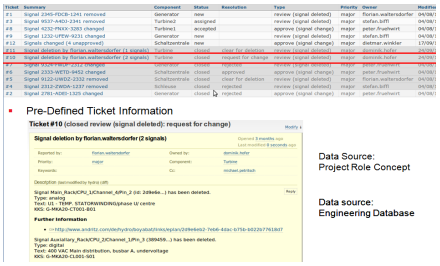
Changes to engineering plans in distributed and parallel engineering of industrial plant engineering often have an impact on plans in related disciplines, while the specific software tools do not cooperate seamlessly.
Tool chains between heterogeneous software tools are to bridge technical and data representation gaps, which take significant effort and risk to close with makeshift Implementations and informally organized data exchange approaches.
The detection and propagation of changes to engineering plans is to become effective, efficient, and robust, to reduce defects and risks in the overall project planning.
Domain experts shall continue to use software tools they are familiar with.

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.
The mapping of common concepts of the domain experts in a project to their local representations in software tools facilitates the automated detection of changes and conflicts and supports informing the relevant domain experts in the project team.
From changes in a discipline the approach can derive can derive the necessary changes in other disciplines and the semi-automated creation of engineering tickets, which get assigned and managed according to the roles in the project.
The change management across software tools has been evaluated with data from real projects with a word-leading steel mill automation specialist.
The first step for an iterative migration towards a traceable tool chain with EPlan Engineering Center and Probas has been tested with a prototype at a word-leading steel mill automation specialist, in order to demonstrate that the efficient integration of heterogeneous software tools is possible even in a complex tool landscape.



Beispiel für Engineering-Tickets



Technical Specification:

- Automation Service Bus®, service-oriented architecture
- EPlan Engineering Center, Probas
- Integration of data models across common concepts on project level
- Qualified for the cooperation with data exchange standards, such as AutomationML

Benefits for customers

- Domain experts can find and resolve inconsistencies from parallel changes to engineering objects efficiently (in hours instead of weeks).
- Project managers can choose tool chains with user interaction or as automated batch run.
- Quality managers can evaluate activities on engineering objects (e.g., changes to library code blocks) automatically, even across several projects.

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