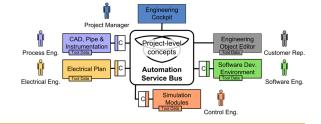# Quality-Controlled Tool Chains

The effort for the quality cont-rolled propagation of changes to engineering plans across tool chains in heterogeneous software tools in several disciplines should be reduced.

The traceable and automated pro-pagation 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 soft-ware tools do not cooperate seam-lessly.

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 ro-bust, to reduce defects and risks in the overall project planning.
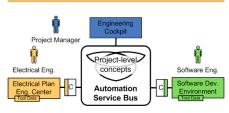
Domain experts shall continue to use software tools they are familiar with.

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 engi-neering plans in heterogeneous soft-ware tools.

The mapping of common concepts of the domain experts in a project to their local representations in soft-ware 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 ap-proach can derive can derive the ne-cessary changes in other disciplines and the semi-automated creation of engineering tickets, which get assig-ned 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 migra-tion towards a traceable tool chain with EPlan Engineering Center and Probas has been tested with a pro-totype at a word-leading steel mill automation specialist, in order to de-monstrate that the efficient integrati-on of heterogeneous software tools is possible even in a complex tool landscape.

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

Beispiel für Engineering-Tickets

Benefits for customers

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

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