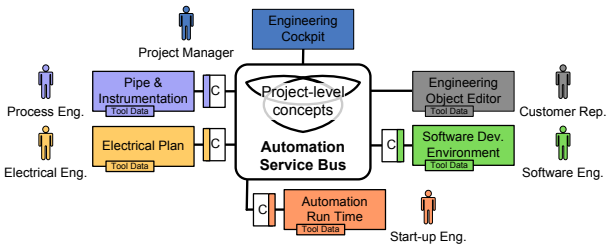
Change Management Across Tools in Plant Engineering (ECM)



The effort for propagating changes in engineering plans to heterogeneous software tools in other engineering domain is to be minimized. The automated propagation of changes using the „Automation Service Bus®“ helps the project team to achieve this goal.

Goal

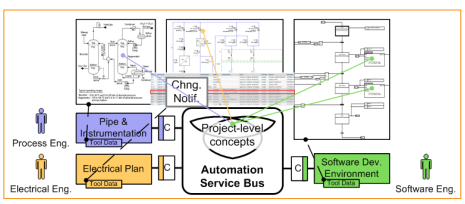
In the distributed and parallel engineering of industrial plants changes to a plant often have an impact on plans in other domains; however, the relevant software tools do not cooperate seamlessly. As an example the change of a sensor can imply the need to adapt the wiring in the electrical plan and the measurement scale in the control software program. Between heterogeneous software tools there are technical and semantic gaps, which often can be closed by support applications and informal data exchange only with considerable expert effort and insufficient reliability.

- To minimize defects and risks in the overall plant planning the recognition and propagation of changes to engineering plans should be effective, efficient, and robust.
- Domain experts want to continue using their familiar software tools.
- Onsite changes to plans can be included.

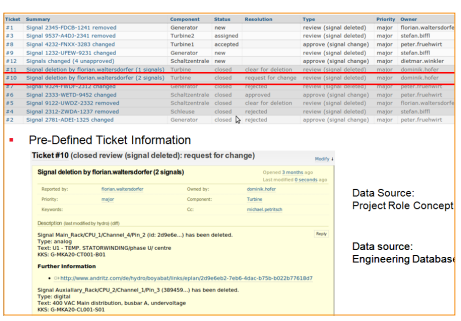
Solution

logi.cals and the Christian Doppler research laboratory CDL-Flex at the Technische Universität Wien have developed the „Automation Service Bus®“, an open technology to bridge technical and semantic gaps between planning models in heterogeneous software tools.

Change Management in Plant Engineering



Example Engineering Tickets



Customer Benefit

- Minimizing of defects and risks coming from inconsistent engineering plans in distributed engineering.
- Efficient communication of changes in the project team.
- Simple and fast recognition and resolution of conflicts in case of parallel changes.
- Engineering effort reduction from days to hours.

Mapping the project-level common concepts coming from the domain experts to local representations in software tools enables the automated recognition of changes and conflicts in order to efficiently inform the relevant experts in the project team.

From changes in an engineering domain the need for changes in corresponding domains can be derived and so-called engineering tickets can be generated to keep the overview on open change issues.

Change management across software tools has been successfully evaluated at ANDRITZ HYDRO with data from real-world projects.

Technical Data:

- Automation Service Bus®
- Service-oriented architecture
- Semantic integration of common concepts on project level
- Fit for the extension of AutomationML

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