The effort for collecting, evaluating, and monitoring of selected critical project parameters should be minimized in heterogeneous engineering environments, such as in project consortia. Based on changes a selective observation of agreed parameters in engineering and project plans, e.g., the monitoring of effort and cost of development steps or the compliance of technical constraints across domains, should be enabled. The centralized multi-model dashboard enables the efficient selection and monitoring of critical project parameters in a defined project context.

**Goal**

Heterogeneous engineering teams, e.g., in project consortia, typically use local and isolated software tools for various tasks. Critical parameters, which are available only in local applications, hinder collaborative engineering and project management within project consortia. In particular, for flexible production systems, the correct mapping of data from operation with engineering knowledge from development is essential. Continuous monitoring of defined parameters enables the prompt response to changed artifacts and parameters in heterogeneous engineering environments. Individual project participants and members of project consortia continue to use their well-known software tools in local environments. Interfaces to the run-time system can be linked to parameters from the development phase.

**Implementation**

The multi-model dashboard, developed by logi.cals and the Christian Doppler Laboratory “CDL-Flex”, enables project participants and project managers to efficiently select and monitor parameters in heterogeneous engineering environments. The mapping of common concepts to local representations enables automated detection of changes and monitoring of constraints under defined conditions. The multi-model dashboard enables the observation of defined critical parameters in a heterogeneous and distributed environment within defined application areas. Plan changes or violations of comprehensive constraints can be recognized (e.g., effort and engineering quantities). Early notification of roles (e.g., project managers or involved engineers) regarding critical changes.

**Benefit for customers**

- Individual stakeholders continue using their common working environment.
- Experts are able to efficiently define, subscribe to, and observe critical project parameters, even if the data are located in different local repositories.
- Related stakeholders are informed in time of critical changes of parameters in other domains.
- The multi-model dashboard represents a central platform for efficient and user-friendly collaboration during an engineering project and at run time.

**Technical Specification:**

- Automation Service Bus®
- Service-oriented architecture
- Publish/Subscribe mechanisms
- Semantic Integration of common concepts on project level
- Engineering Cockpit / Dashboard

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