Recommendation SysML WF/IF

SysML WF/IF

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Abstract

Collaboration based on SysML gets more and more important during the product development. On the one hand the importance of collaboration for system development is increasing and on the other hand the usage of SysML as standard for Model Based Systems Engineering (MBSE) is already considered in many companies.

In case of system modeling, the fact of having a common language does not mean at the same time, that there is a common exchange format available. Looking to current system development projects it is obvious, that collaboration scenarios where different system modeling tools are used, are not unusual. On top collaboration partners frequently use individual SysML profiles in combination with individual methodologies.

All the points make it a challenging situation for many companies to exchange system models and were reasons, why the SysML Workflow Forum (SysML WF) was founded in 2017. Besides the exchange of system models of course, related artefacts like requirements or test cases need also to be exchanged and bring the complexity of the exchange to an even higher level. The SysML WF decided to define three main use cases that were addressed in different work packages, to consider the main challenges of model exchange and the related artefacts. The three use cases are:
- Model Exchange
- Requirements Engineering & System Design
- Verification & Validation

In 2021 the SysML Implementor Forum (SysML IF) started its work, to have a closer look on the technical realization of the addressed use cases. Several vendors are participating inside the SysML IF representing different tool categories like authoring tools or traceability solution providers. Goal of the SysML IF is on the one hand to demonstrate current capabilities and approaches to the SysML WF and on the other hand to find technical solutions for the use cases and requirements addressed by the SysML WF.

This recommendation gives an overview on the findings and work results of both working groups, that have been elaborated so far. The different use cases are presented and an overview on the existing approaches for model exchange and existing exchange formats is given. The document closes with an outlook on the open points and the next steps.

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