

## Please join us on the 2nd INCOSE/GfSE Webinar

When Wednesday 6 October 2021 from 11:00am-12:00pm EDT (3:00pm-4:00pm UTC)

**Topic SpesML** - SysML Workbench for the SPES Methodology

**Speakers** Dr. Maximilian Junker and Dr. Wolfgang Böhm





### Abstract

Scientific research results achieved together with partners from industry and academia by the Technical University of Munich show that the introduction of model-based system development of cyber-physical systems into the industrial development process offers a wide range of benefits, but requires a readjustment of the development. This concerns the development method, artifacts, tools and organization. So far, the industrial introduction of MBSE often uses the modeling language SysML as a quasi-standard, which is firmly established in practice by tool providers and standardization organizations. However, the analysis of the introduction projects shows that SysML is currently often used without a consistent development methodology, which (i) specifies which models are created and how these models are interrelated, and (ii) provides a precise understanding of the diagrams. Thus, crucial potential offered by MBSE remains unused, because ultimately the well-coordinated selection of methodology, modeling language and modeling tool is a crucial factor for a successful application of MBSE in industrial practice. The project "SysML Workbench for the SPES Methodology" (SpesML), funded by the German Federal Ministry of Education and Research (BMBF) and involving a total of 11 partners from industry and research as well as 2 active associated partners, aims to close this gap and to show ways for a successful implementation of the MBSE methodology in industry.

With the Software Platform for Embedded Systems (SPES), an end-to-end methodology for MBSE has been developed. On this basis, a SysML profile with a precise semantics that can be used for automation such as automated analysis and simulation, is defined in SpesML. This gives the widely used modeling language SysML a methodological foundation and thus opens the way to comprehensive MBSE.

Key messages in the webinar:

- Challenges in the implementation of MBSE
- Introduction into basic concepts of the SPES methodology
- Implementation of initial concepts in SysML within the SpesML Workbench based on Magic Draw
- MBSE maturity model as a proven approach for practical MBSE implementation.

## **Biographies**

**Dr. Maximilian Junker** is a co-founder of Qualicen and member of the scientific staff at the Software & Sytems-Engineering chair at the Technical University of Munich. As MBSE professional he consults companies during introduction of MBSE and develops methodical and technical solutions for MBSE. As researcher he contributed to the SPES research projects. He is a regular speaker on conferences for software and systems engineering.

**Dr. Wolfgang Böhm** is a senior member of the scientific staff at the Technical University of Munich. He brings in 25 years of industrial experience in the area of systems and software engineering and was one of the main contributors to the development of the SPES methodology. He was in charge of several MBSE related research projects at the chair of Software and Systems Engineering at the Technical University of Munich. Among others he led the SPES projects and is now leading the SpesML project.

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Regards, Christian Lalitsch-Schneider <u>christian.lalitsch-schneider@zf.com</u>

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