

The Business Informatics Group together with the Faculty of Informatics at TU Wien, the Austrian Computer Society, and the Center for Computer Science invites to the talk

Language and Model Engineering

Prof. Dr. Bernhard Rumpe

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When? **March 2nd, 2017**
 5 p.m.

Where? Technische Universität Wien
 1040 Wien, Favoritenstraße 9-11
 Seminarraum Zemanek



Abstract

Modeling is key for any engineering discipline to design a system and to early understand its quality. Effective modeling needs appropriate modeling languages, because as already Wittgenstein said: "The borders of my language are the borders of my world."

General consensus of model-driven engineering is, that domain-specific modeling languages help to reduce the "conceptual gap" between problem domains and software engineering. While this specialization helps domain experts to express solutions, software and system architecture issues transcend different domains. Cyber-physical systems (CPS) touch even more sub-domains than traditional products and thus need even better integration of languages describing individual aspects of the CPS.

While specialization helps domain experts to express solutions to specific challenges, system and software architecture issues transcend different domains. Independent of the intended domain, modeling systems and software architectures provides many benefits such as abstraction, reusability, composability, and extensibility. We examine the promises and challenges that facilitate reuse, composition and extension even on the language level. We discuss useful language design principles that allow to come up with tailored solutions for modeling, designing and analyzing software systems already in early stages.

Bio

Bernhard Rumpe is heading the Software Engineering department at the RWTH Aachen University, Germany. Earlier he had positions at INRIA/IRISA, Rennes, Colorado State University, TU Braunschweig, Vanderbilt University, Nashville, and TU Munich. His main interests are rigorous and practical software and system development methods based on adequate modeling techniques. This includes agile development methods like XP and SCRUM as well as model-engineering based on UML-like notations and domain specific languages. He has contributed to many modeling techniques, including the UML standardization. He also applies modeling, e.g. to autonomous cars, human brain simulation, BIM energy management, juristical contract digitalization, production automation, cloud, and many more. He is author and editor of ten books and Editor-in-Chief of the Springer International Journal on Software and Systems Modeling (www.sosym.org).

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