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Keynote Speech

Cross-disciplinary Modeling - the Good, the Bad, and the Ugly

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Abstract

Model-driven software engineering has gained momentum in academia as well as in industry for improving the development of evolving software by providing appropriate abstraction mechanisms in terms of software models and transformations thereof. With the rise of cyber-physical systems in general, and cyber-physical production systems in particular, the interplay between several engineering disciplines, such as software engineering, mechanical engineering and electrical engineering, becomes a must. Thus, a shift from pure software models to cross-disciplinary models has to take place to develop the full potential of model-driven engineering for the whole production domain. Cross-disciplinary models are also essential to raise the level of flexibility of production systems in order to better react to changing requirements, since systems are no longer designed to be, but they have to be designed to evolve. In this talk, we will have a look at current practice of cross-disciplinary modeling with special emphasis on good, bad, and ugly habits. We will point to ongoing work of (hopefully) improving this situation by applying and further developing model-driven techniques such as consistency management and co-evolution support for the production domain.

About the speaker

Gerti Kappel is full professor at the Institute of Software Technology and Interactive Systems at TU Wien, chairing the Business Informatics Group. Until 2001, she was a full professor of computer science and head of the Department of Information Systems at the Johannes Kepler University of Linz. From 2004 to 2007, she acted as dean of studies for Business Informatics. She is a faculty member in the Doctoral College "Cyber-Physical Production Systems" funded by TU Wien. Since 2014, she is a board member of the Austrian Science Fund (FWF). Since beginning of 2016, she is also a member of the dean's team of the Faculty of Informatics responsible for research, diversity, and financial affairs. Her current research interests include Model Engineering, Web Engineering, and Process Engineering, with a special emphasis on cyber-physical production systems.