

KEYNOTE:

MODEL-BASED SOFTWARE DEVELOPMENT – PERSPECTIVES AND CHALLENGES

Bernd-Holger Schlingloff

Humboldt University
Kekuléstr. 7, 12489 Berlin, Germany

ABSTRACT

Model-based software development and testing has turned out to be the method of choice for safety-critical embedded systems. An abstract model reflects requirements and environmental conditions for the system. Such a model can be used in two ways—as a development model in a stepwise refinement process to derive the actual implementation, or as a testing model in order to derive test cases for some system under test. In this talk we discuss commonalities and differences between development models and testing models, discuss the formalization of requirements in models, and show how to automatically evaluate observations about a system with respect to a model. We illustrate our ideas with examples from aerospace, automation and medical devices. Finally, we discuss some recent trends and challenges in the area of model-based development and testing.