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Seminar

Challenges for Model-Based System Engineering: Past, Present and Future

Michael Tiller
Author of "Introduction to Physical Modeling with Modelica"
and Owner of Xogeny Laboratories

Model-based System Engineering has been recognized, for some time, as a way for companies to improve their product development processes. However, change takes time in engineering and we still have only scratched the surface of what is possible. New ideas and technologies are constantly emerging that can improve a model-based approach. In this talk, I will discuss some of my past experiences with model-based system engineering in the automotive industry. I'll also discuss the shifts I see from numerical approaches to more symbolic approaches and how this manifests itself in a shift from imperative representations of engineering models to more declarative ones. I'll cover some of the interesting challenges I've seen trying to model automotive systems and how I think those challenges can be overcome moving forward. Finally, I'll talk about some of the exciting possibilities I see on the horizon for modeling.

Dr. Michael Tiller received his Ph.D. in Mechanical Engineering from the University of Illinois at Urbana-Champaign in 1995. After graduating, he worked at Ford Motor Company in the Powertrain Research Department. His work focused on modeling of engine and transmission systems. In particular, he worked on many applications involving the Ford Hybrid Escape, the first production hybrid in North America and the first production SUV in the world. He is an author of 8 patents worldwide for his work on the Ford Hybrid Escape. Dr. Tiller left Ford in 2005 to join Emmeskay, a Michigan based engineering consulting company, as Vice-President of Modeling R&D. In 2010, Emmeskay was acquired by LMS International. In 2011, Dr. Tiller joined Dassault Systèmes HQ in Paris to become Worldwide Director of Marketing for PLM Systems. In August 2012, he started his own company, Xogeny, to help companies accelerate their model-based system engineering processes through consulting and tool development.

Dr. Tiller has been involved with the Modelica modeling language since 1999, and a member of the Modelica Association board since it was formed. He wrote the first book on Modelica, "Introduction to Physical Modeling with Modelica" in 2001. He is active in the ongoing development of the Modelica language, the Modelica Standard Library and the recent FMI standard. In October 2012, he launched a Kickstarter campaign to fund the writing of a new Modelica book to be released under a Creative Common license.

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