

Model-based Simulation for a Robotics Application

Abstract

The aim is to present the ongoing work on applying state of the art on model-based technologies for the development of robotics applications. The goal of this integration is to improve the pertinence of the verification and validation phase, by integrating information from various potential outdoor environments; in order to obtain an exploitable technology would cover early validation and compatibility checks between the expected behaviour and the system architecture. In a longer run, the robotics field could capitalise on the experience of qualifiable/certified code generation in the area of model-based embedded system development.

Preliminary experiments performed in the context of the Papyrus-RT environment and using as a case study the UML-RT modelling of a Rover provide encouraging results and incentives to continue this approach.

About the Speaker



Prof. Dr. Ileana Ober is full professor at Paul Sabatier University, in Toulouse, France, and a member of the IRIT laboratory, where she leads a research group working on high quality software and system development ARGOS (Advancing RiGorous Software and System Engineering). She holds a PhD from the Polytechnic Institute of Toulouse in 2001 and a Habilitation from the University of Toulouse since 2010.

She was research engineer at Telelogic, where she worked on several research projects (IST WOODDES, ITEA UMsdL) and was actively involved in the UML action semantics definition at the OMG and with the definition of SDL 2000 at ITU. After a post-doc at VERIMAG studying model-driven validation of real-time systems using UML timing constraints in the context of the IST project OMEGA, she joined IRIT as associate professor, where she works on developing techniques to include domain specific language based development in a model-driven engineering framework, on applying modeling techniques on applications from fields such as cyber-physical systems, high-performance computing or robotics.