

Practical transfer of model-based development methods

itemis: VireS and WieMod research projects launched

Lünen, November 12th, 2008. itemis AG, a leading IT consulting firm and service provider based in Lünen, Germany, is announcing its participation on the new VireS and WieMod research projects. In association with renowned partners, itemis currently carries out various research projects, including VireS and WieMod, to investigate the transfer to practice and further development of research results in the context of model-based development methods. The VireS project has undertaken to develop a modeling tool based on Eclipse, while WieMod is focusing on the issue of »reusing simulation models«.

VireS – utilising knowledge from itemis

On the VireS research project, itemis is developing a modeling tool based on Eclipse for the integrated specification of product and production systems for mechatronic products. The integrated specification technology that supports the resulting tool is a »systems engineering approach« that is primarily geared towards engineers working in pre-development. In the integrative approach, the product and the production system, as well as their interactions, are mapped. This makes it possible to evaluate costs and stability when features change. This is of particular importance in avoiding tedious iteration loops that are due to the following starting point: given the current market and competitor situation, companies need to develop and manufacture more robust products quicker and more cost-effectively. Dependencies between the product and production system are inadequately taken into account on this, and there are no early evaluation of costs and robustness.

Within the VireS joint project involving partners such as the University of Paderborn, the Heinz Nixdorf Institute in Paderborn, Wincor-Nixdorf and OCE, as well as Behr GmbH and Seuffer from the automobile industry, itemis is individually focusing on the specification tool that models the product and production system as well as the definition of required model structures. itemis' areas of expertise primarily lie in modeling and the construction of modeling tools. Of particular interest in this context is the transfer of itemis' expertise in the field of modeling and tools to the domain of mechatronic systems. The modeling tool generated as a result is in future intended to be provided to the open source community under the auspices of the Eclipse Foundation.

WieMod – model »recycling«

The focus of the WieMod project is the reuse of simulation models. Simulation models are created using tools such as MatLab/Simulink, Modelica or Ascet and involve a considerable amount of work. Consequently, the plan is to be able to reuse these models in future. The prerequisite for this is the creation of a general metamodel, the construction of a model repository, the option of inquiring about model properties via queries and the performance of similarity analyses on models. Within the WieMod project, these tool aspects are to be implemented in the form of prototypes and verified using simulation models of satellites and examples from the mechanical engineering sector.

In the joint project with partners such as Astro Feinwerktechnik GmbH, the DLR, the University of Stuttgart and the ISG, itemis' areas of expert responsibility are metamodeling and model processing: principally, the itemis team will cover the sphere of »modeling and transformation technologies«. This sector includes the processes and tools as well as activities, ranging from concept design to testing. Simulation models are a valuable knowledge base that, when reused efficiently, can generate profit. At the same time, executable models create particularly high demands on the tool chain. WieMod throws up a series of practical issues that finding the answer too will make the creation of complex systems easier.

About itemis

itemis is an independent IT consulting firm based in Lünen. The long-term positive development of the company since it was founded in 2003 is revealed impressively by its constant growth. This growth is reflected in the some 90 staff and also by the number of offices: Bonn, Hilden, Pforzheim and Kiel are among the high-performance and innovative company's bases. itemis' core area of expertise lies in the introduction of model-driven software development (MDSO). The company's MDSO experts play a key role in the development of the openArchitectureWare (oAW) tool to support MDSO methods. itemis helps its customers with the introduction of modern software development methods that feature a high degree of automation potential, thus making increases in productivity and improvements in the quality and maintainability of software systems possible. A reduction in costs over the entire application lifecycle is a further argument in favour of the MDSO approach. Since March 2008, itemis has been a strategic member and on the Supervisory Board of the Eclipse Foundation. The company is committed to the further development of the Eclipse Modeling Project and is providing five of its developers for the community's use. The company is also involved in various research projects and, in collaboration with the Chair in Messaging Technology at the Technical University of Dortmund, is working on an Eclipse-based umbrella platform for the model-driven development of embedded systems. Further information on the company can be found at www.itemis.de.

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