Preliminary Program

7th MODPROD Workshop on Model-Based Product Development

Linköping University – www.modprod.liu.se – February 5-6, 2013

Organizers: Peter Fritzson, Petter Krus, Kristian Sandahl

Note: public versions of the presentations will be put on-line on the web

MODPROD Program Tuesday February 5, Tutorials and Workshop

<table>
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<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>08.30-09.00</td>
<td>Registration and coffee outside room A2, in Building A, Linköping University</td>
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| 09.00-10.45  | Tutorials in Parallel, Length 3:15h

**Tutorial 1:** Peter Fritzson, Linköping University. “Introduction to Object Oriented Modeling and Simulation with Modelica using OpenModelica”. Hands-on Exercises, bring your laptop.

**Tutorial 2:** Wladimir Schamai, EADS, and Adrian Pop, Linköping University, “Model-based Development using ModelicaML, Value Bindings for Model Composition and Requirements Traceability, and the Modelica MDT Eclipse Plugin with Run-Time Debugging”, hands-on exercises, bring your laptop.

**Tutorial 3:** Peter Ylén, VTT and Teemu Lempinen, Semantum; both in Espoo, Finland, “Simantics System Dynamics for Business Process Modeling; also Simupedia Concept”. Hands-on Exercises, bring your laptop.


**Tutorial 5:** Petter Krus, Linköping University, “System simulation with HOPSAN NG”. Hands-on Exercises, bring your laptop.

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<tr>
<td>10.45-11.00</td>
<td>Coffee break outside room A2</td>
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<tr>
<td>11.00-12.30</td>
<td>Tutorial 1, 2, 3, 4, 5 in parallel, continued, same rooms as above</td>
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<tr>
<td>12.30-13.30</td>
<td>Lunch at Kårallen, Linköping University</td>
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<tr>
<td>13.30-15.00</td>
<td>MODPROD Introduction, Plenary Session 1, room: A2, Session Chair: Peter Fritzson</td>
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<tr>
<td>13.30-14.30</td>
<td>Keynote, Stefan-Alexander Schneider, Technical Specialist, BMW, Berlin, Germany, “Virtual System Prototyping in Automotive Industry and the role of FMI”</td>
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<tr>
<td>14.30-15.00</td>
<td>Peter Fritzson and Petter Krus, Linköping University, “Presentation of Research at the Centre for Model based Product Development, MODPROD”</td>
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<td>15.00-15.50</td>
<td>Coffee break + Poster Session and exhibition outside room A2, see poster presentation program</td>
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| 15.50-17.30  | Session 2a, Model-Based Systems Engineering, room A2, Session Chair: Kristian Sandahl
Peter Aronsson, Wolfram MathCore AB, Linköping, Sweden “A Collaborative Platform for Systems Engineering Tools over the Internet with Connections to Wolfram SystemModeler”,
Roland Almgren, KnowIT AB, Sweden, “Integrated Product Models”
Östen Frånberg, Engineering Academy of Science, Stockholm, Sweden. “Model-Based Development for Internet of Things”
Alfredo Garro, Andrea Tundis, University of Calabria, Italy, “Enhancing the RAMSAS method for Systems Reliability Analysis through Modelica”

| 15.50-17.30  | Session 2b, Model-Based Engineering, room ACAS, Session Chair: Petter Krus
Juha Kortelainen, VTT, Espoo, Finlan, “Simantics Mechanics: 3D modelling and simulation tool for multibody system simulation”
George Provan, Cork University, Ireland, “A Modelica-Based Framework for Thermo-Fluid System Diagnostics”
Wei Li, Tetiana Bogodorova, Luigi Vanfretti, KTH, Stockholm, “Unambiguous Power System Modeling and Simulation using Modelica Tools”
Polaiah Bojja, Rominus Valsalam, Abhir Metkar. CDAC, Trivandrum, India, “Evaluation and Self-Tuning of Robust Adaptive PID Controller & Fuzzy Logic Controller for Non-Linear System-Simulation Study” |

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<tr>
<td>17.40</td>
<td>Bus to Norrköping Visualization Center and later to main hotels</td>
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<td>19.00</td>
<td>Workshop Dinner at the Norrköping Visualization Center</td>
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MODPROD Program for Wednesday February 6

07.50-08.15 Bus passing main hotels, arriving Linköping University at 08.15

08.00-08.30 **Registration** outside room A2, Building A, Linköping university

08.30-08.40 **Workshop 2nd Day, Introduction, Plenary Session (Chair: Peter Fritzson), room A2**

08.40-09.40 **Keynote**, Moritz Diehl, Principal investigator at OPTEC Center and Professor at University of Leuven, Belgium, “Modelling Tools for Optimal Control and Embedded Optimization”

09.40-10.40 **Keynote**, Jon Whittle, Professor and Chair of Software Engineering in the Department of Computing at Lancaster University, UK, “Model-Driven Development: Does Anyone in Industry Really Use It?”

10.40-11.30 Coffee, Posters and Exhibition outside room A2, see separate poster presentation program

11.30-12.30 **Parallel Session 1a, Model-Based Design and Engineering**, Session Chair: Kristian Sandahl, room A2
Niclas Wiberg, Ericsson, Sweden “Modeling Telecommunication Applications for Efficient Mapping to Heterogeneous Processing Architectures”
Andreas Pfeiffer, DLR, Munich, Germany, “System Analysis and Applications with PySimulator”

11.30-12.20 **Session 1b, Model-Based Engineering**, Session Chair: Petter Krus, room ACAS
Daniel Bouksela, EADS, Paris, France, “Modeling Power Plants with ThermoSysPro and OpenModelica”
Kenneth Bodin, Algoryx, Umeå, “Large-Scale Real-Time Physics Simulation in Industrial Vehicle Simulators”

12.20-13.20 Lunch at Kårallen, Linköping University. Posters and Exhibition outside room A2

13.20-14.55 **Parallel Session 2a, Model-Based Engineering and Applications**, Session Chair: Petter Krus, room A2
Anna Sjunnesson, Siemens Industrial Turbomachinery AB, Finspong, “Modelica Modeling and Real-Time Simulation of Gas Turbines”
Nils Menager, Lars Mikelsons, Bosch-Rexroth Gmbh, Germany, “An Approach for the Automated Design of Mechatronic Systems Using an Object-Oriented Simulation Environment”
Edmund Widl and Wolfgang Müller, AIT, Vienna, “Linking FMI-based Components with the Ptolemy Discrete Event System”
Robert Braun, Linköping University, Sweden, “Functional Mock-Up Interface (FMI) for Tool-Independent Parallel Distributed Simulations”

13.30-14.55 **Parallel Session 3a, Model-Based Engineering and Development**, Session Chair: Kristian Sandahl, room ACAS
Peter Ylen, VTT, Espoo, Finland, “System Dynamic Modeling and Simulation of Business Processes”
Erik Billing and Martin Servin, Umeå Univ, “Composer - A Prototype Multilingual Model Composition Tool”
Wladimir Schamai, EADS Germany & Linköping University, Sweden, “Industrial Use Cases for Requirements Verification and Model Composition in ModelicaML”

14.55-15.15 Coffee, Posters and Exhibition outside room A2

15.15-16.30 **Parallel Session 3a, Model-Based Design and Development**, Session Chair: Petter Krus, room A2
Adrian Rutle, Hans Georg Schaathun, Høgskolen i Ålesund, Norway, “Model-Driven Engineering: Combining Structure and Behavior of Simulation System”
Martin Törngren, ACES, KTH, Stockholm, “Integration of Multiple Views Across People, Models and Tools”

15.15-16.30 **Parallel Session 3b, UML-Based Software Engineering**, Session Chair: Kristian Sandahl, room ACAS
Thomas Arts, Quviq AB, “Model Based Testing of AUTOSAR components”
Anders Eriksson, Saab Aeronautics, “Model Transformation Impact on Test Artifacts”
Pär Hammarström, Knwit AB, Linköping, Sweden, “When MBSE and Agile Cultures Collide: Fusion or Fission”

16.30-16.40 Break

16.40-17.10 **Panel Discussion, (plenary session)**, room A2