MODPROD

20th MODPROD Workshop on Model-based Cyber-physical Product Development

Linköping University, February 3-4, 2026

"The Game of Product Modelling"

Preliminary Program

Tuesday February 3

08.30-09.00	outside room A2

Registration and coffee

09.00-10.00	

Tutorials in parallel

- **Tutorial 1:** Prof. Peter Fritzson, Linköping University.
  "Introduction to Object Oriented Modeling, Simulation, Debugging and Dynamic Optimization with Modelica using OpenModelica"
- **Tutorial 2:** Robert Braun, Linköping University.
  "Functional Mockup Interface for Composite Modeling, Co-simulation and Model Exchange"
- **Tutorial 3:** John Tinnerholm, Linköping University.
  "Simulation and Interoperability using OMJL the OpenModelica system in Julia"

10.00-10.30	outside room A2

Coffee break and poster exhibition

10.30-12.00	

Tutorials continued

12.00-13.10	Kårallen

Lunch

13.10-15.30	room A2

Plenary Session 1. Chair: To be announced.

- **Welcome by the MODPROD Director.** Niclas Fock
- **Information by the organizers.** Robert Braun
- **Keynote:** Prof. Benoit Combemale, INRIA.
  "There Is Only One Time in Systems Engineering! Towards a Continuous (model-based) Engineering"
- **Keynote**: Prof. Ramin Karim, Luleå University of Technology.
  "AI Factory for System Lifecycle Management - Concepts and Applications"

15.30-16.00	outside room A2

Coffee break and poster exhibition

16.00-17.00	room A2

Parallel Session 2a. Model-based Engineering. Chair: To be announced.

- Jasamin Akbari, Björn Nagel and Christopher Jouannet.
  "The Challenge Of System-of-systems: From Defining the Problem to Shaping the Solution Architecture"
- Torvald Mårtensson.
  "Testing and Test Environments for Large Scale Cyber Physical Systems: State of the Art and Emerging Challenges"
- Máté Földiák, José Antonio Hernández López, Lena Buffoni and Dániel Varró.
  "Text2MQL: Fine-tuning Open-source Language Models for Model Query Languages Using ChatGPT"

16.00-17.00	room ACAS

Parallel Session 2b. Modelling and Simulation. Chair: To be announced.

- Ludvig Knöös Franzén.
  "The COLOSSUS Methodology for Holistic System-of-Systems Engineering"
- Robert Braun, Magnus Landberg and Cezar-Victor Boruga.
  "Taking the Simulation Onboard: Power-in-the-loop Simulation of HILA Multi-Rod in Unmanned Aircraft"
- Arne Speerforck & Jan Westphal.
  "A tool-chain for the development and simulation of large-scale district heating network models"

17.15	

Technical visit: Vehicular Systems Laboratory

19.00	Universitetsklubben

Conference Dinner

MODPROD

Wednesday February 4

08.00-08.30	outside room A2

Registration and coffee

08.30-10.00	room A2

Plenary Session 4. Chair: Daniel Varro

- **Keynote:** Dr. Björn Nagel, DLR/Linköping University.
  "Collaborative Aircraft Design Engineering for Future Technologies"
- **Presentation of Research at the MODPROD center.** Lena Buffoni, Niclas Fock, Daniel Varro, Adrian Pop, and Petter Krus.

10.00-10.30	outside room A2

Coffee break and poster session

10.30-11.30	room A2

Parallel Session 5a. Standards & Languages. Chair: To be announced.

- Smit Saparia, Viktor Larsson, Bo Liu, Henrik Lönn and Svetla Käck.
  "Utilizing open standards - an automotive use case example simulation"
- Fredrik Bagge Karlsson.
  "Analysis Points in Acausal Modeling Languages"
- Robert Hällqvist & Kristian Amadori.
  "Using FMI/SSP/SysML in an International Large-Scale Industrial Context"
- Axel Matstoms.
  "On the Modeling of Aircraft Fuel Systems using the ThermofluidStream Library"

10.30-11.30	room ACAS

Parallel Session 5b. Model-based Aplications. Chair: To be announced.

- Johannes Emilsson, Anders Bergqvist, Fredrik Henningsson and Manikanta Venkatesh.
  "VSim at Volvo Cars: Architecture and Evolution from Simulink to Modelica"
- Katerina Hofmann, Christian Hesse, Mara Fuchs, Jörn Biedermann and Björn Nagel.
  "Cabin-centric aircraft development approach: exploring possibilities and potentials"
- Dominik Frey, Ulf Kargén and Dániel Varró.
  "Assessing Scene Generation Techniques for Testing COLREGS-Compliance of Autonomous Surface Vehicles"
- Lars Eriksson.
  "Time Effective Testing and Compact Modeling of Electrochemical Impedance Spectroscopy (EIS) for Lithium Ion Batteries"

12:30-13.30	Kårallen

Lunch

13.30-14.30	room A2

Parallel Session 6a. Artificial Intelligence and Machine Learning. Chair: To be announced.

- Masoud Sadrnezhaad, José Antonio Hernández López, Torvald Mårtensson and Dániel Varró.
  "Generative AI in Simulation-Based Test Environments for Large-Scale Cyber-Physical Systems: An Industrial Study"
- Petter Krus.
  "Text to model using AI"
- Vinicius Marini.
  "GenAI Assistance to Model Synthesis with Prompt Modularization"

13.30-14.30	room A2

Parallel Session 6b. Model-based Engineering. Chair: To be announced.

- Reno Filla.
  "Adding weather data to analyses of vehicle systems"
- Amin Bajand.
  "Towards a standard for Uncertainty Quantification in Modelica and FMI"
- Matthias Schaefer and Leo Gall.
  "ReSim - Multitool regression testing for library development"

14.30-15.00	outside room A2

Coffee break

15.00-15.30	room A2

Panel Discussion