8th International Workshop on Multi-Paradigm Modeling – MPM'14

September 28-30, 2014 – Satellite event @ MODELS 2014 – Valencia, Spain

Organizing Committee

Daniel Balasubramanian, Vanderbilt University
Christophe Jacquet, Supélec
Sahar Kokaly, McMaster University
Tamás Mészáros, Budapest University of Technology and Economics
Pieter Van Gorp, Eindhoven University of Technology

Steering Committee

Pieter J. Mosterman, The MathWorks Inc.
Hans Vangheluwe, University of Antwerp and McGill University
Gabor Karsai, Vanderbilt University
Tihamér Levendovszky, Vanderbilt University
Vasco Amaral, Universidade Nova de Lisboa
László Lengyel, Budapest University of Technology and Economics

Program Committee (tentative)

Maurício Alferez, INRIA
Bruno Barroca, Universidade Nova de Lisboa
Kirstie Bellman, The Aerospace Corporation
Frédéric Boulanger, Supélec
Didier Buchs, University of Geneva
Arnaud Cuccuru, CEA LIST
Juan de Lara, Universidad Autonoma de Madrid
Joachim Denil, McGill University
Dirk Deridder, Smals
Thomas Huining Feng, LinkedIn Corp.
Holger Giese, Hasso-Plattner-Institut
Esther Guerra, Universidad Autónoma de Madrid
Reiko Heckel, University of Leicester
Wesley Hewett, Lockheed Martin MST
Steve Hostettler, University of Geneva
Thomas Kühne, Victoria University of Wellington
Levi Lucio, McGill University
José Luis Risco Martín, Universidad Complutense de Madrid at Madrid
Allan McInnes, University of Canterbury
Gergely Mezei, Budapest University of Technology and Economics
Bart Meyers, University of Antwerp
Mark Minas, University of the Federal Armed Forces
Chris Paredis, Georgia Tech, Atlanta, Georgia
Hessam Sarjoughian, Arizona State University
Srini Srinivasan, Lockheed Martin
Martin Toerngren, KTH Royal Institute of Technology
Stefan Van Baelen, iMinds
Jeroen Voeten, Eindhoven University of Technology
Bernhard Westfechtel, University of Bayreuth

Scope of the Workshop

Computational modeling has become the industry norm to remain competitive and be successful. As such, Model-Based Design of complex, software-intensive systems has enterprise-wide implications and modeling is not limited to isolated uses by a single engineer or team. Instead, it has reached a proliferation much akin to large software design, with requirements for infrastructure support such as version control, configuration management, and automated processing.

The comprehensive use of models in design has created a set of challenges beyond that of supporting one isolated design task. In particular, the need to combine, couple, and integrate models at different levels of abstraction and in different formalisms is posing a set of specific problems that Multi-Paradigm Modeling (MPM) aims to address.

The essential element of multi-paradigm modeling is the use of explicit and heterogeneous models throughout. This leads to a framework with omnipresent models. Some represent the syntax of formalisms used for modeling, others are used to model the transformations that represent the operational semantics, as well as model-to-model transformations for inter-formalism transformation. Moreover, others are used to model the composition of models or even to model the composition of modeling formalisms. These models are then used to facilitate generative tasks in a language engineering space, such as evolving a domain specific modeling formalism as its requirements change, but also in a tool engineering space, such as automatic generation of integrated development environments. The use of ubiquitous explicit models during the whole system design process, from modeling formalism definition to system implementation, allows multiple types of analyses at various levels with great benefits in terms of performance, cost-effectiveness, safety, etc.

The purpose of this workshop is to bring together researchers and practitioners in the area of Multi-Paradigm Modeling in order to identify possible points of synergy, common problems and solutions, tool building aspects and visions for the future of the area.

Topics of interest (including, but not limited to)

▪ **Heterogeneous models:** multi-domain and multi-physics modeling, multi-view modeling, multi-abstraction modeling;
▪ **Heterogeneity in modeling languages:** engineering of the modeling language, modeling Models of Computation (MoCs), quality evaluation and usability of modeling languages;
▪ **Multi-Paradigm Modeling techniques:** model transformation, model composition and integration, modeling cross-domain interactions, model-based detection of unanticipated interactions in heterogeneous systems, visualization of multi-paradigm models;
▪ **Applications of and experience with current MPM techniques**. Non-exhaustive list of domains: healthcare, smart cities, smart homes, automotive, future energy systems, human-computer interaction, etc.

Contributions should clearly address the foundations of multi-paradigm modeling by demonstrating the use of models to achieve the stated objectives and discuss the benefits of explicit modeling.

Important dates

Paper submission deadline: July 11, 2014
Notification of acceptance: August 22, 2014
Camera-ready papers due: September 7, 2014

Submission procedure

Papers must be submitted electronically as PDF via EasyChair from the workshop web site:

http://msdl.cs.mcgill.ca/conferences/MPM/

Conceptual papers, as well as application and tool papers, are all welcome.
Papers may be short (max. 6 pages) or full (max. 10 pages) and must follow the LNCS style available at the workshop web site.
Papers will be peer reviewed by at least three members of the program committee.
All accepted workshop papers will be published by CEUR, and will be indexed by DBLP.