

5th International Workshop

Models@run.time

In conjunction with MODELS 2010
OSLO, NORWAY, October 3-8, 2010

<http://www.comp.lancs.ac.uk/computing/users/bencomo/MRT10/>

**5th Workshop on
Models@run.time
at MODELS 2010**

Oslo, Norway, October 5th 2010

Proceedings

Editors

*Nelly Bencomo
Gordon Blair
Franck Fleurey
Cédric Jeanneret*

Organization Committee

Nelly Bencomo
Lancaster University, UK

Gordon Blair
Lancaster University, UK

Franck Fleurey
SINTEF, Norway

Cédric Jeanneret
University of Zurich, Switzerland

Program Committee

Uwe Assman
Dresden, Germany

Betty Cheng
Michigan State University, USA

Fabio M. Costa
Federal University of Goias, Brazil

Jeff Gray
University of Alabama at Birmingham, USA

Jozef Hooman
Embedded Systems Institute, Netherlands

Paola Inverardi
Università dell'Aquila, Italy

Flavio Oquendo
University of Brittany, France

Arnor Solberg
SINTEF, Norway

Thaís Vasconcelos Batista
Federal University of Rio Grande do Norte, Brazil

Franck Chauvel
Peking University, China

Peter J. Clarke
Florida International University, USA

Holger Giese
Universität Postdam, Germany

Oystein Haugen
SINTEF, Norway

Gang Huang
Peking University, China

Jean-Marc Jezequel
IRISA, France

Rui Silva Moreira
Universidade Fernando Pessoa, Portugal

Mario Trapp
Fraunhofer IESE, Germany

Additional Reviewers

Rasmus Adler
Fraunhofer IESE, Germany

Andreas Svendsen
SINTEF, Norway

Yali Wu
Florida International University, USA

Andrew Allen
Florida International University, USA

Thomas Vogel
Universität Postdam, Germany

Xiaorui Zhang
SINTEF, Norway

Preface

Welcome to the 5th Workshop on Models@run.time at MODELS 2010!

This document contains the proceedings of the 5th Workshop on Models@run.time that will be co-located with the ACM/IEEE 13th International Conference on Model Driven Engineering Languages and Systems (MODELS). The workshop will take place in Oslo, Norway, on the 5th of October, 2010. The workshop is organized by Nelly Bencomo, Gordon Blair, Franck Fleurey and Cédric Jeanneret.

From a total of 15 papers submitted 4 full papers, 6 posters were accepted. This volume gathers together all the 10 papers accepted at Models@run.time 2010. After the workshop, a summary of the workshop will be published to complement these proceedings.

We would like to thank a number of people who contributed to this event, especially the members of the program committee and additional reviewers who provided valuable feedback to the authors. We also thank to the authors for their submitted papers, making this workshop possible.

We are looking forward to having fruitful discussions at the workshop!

September 2010

*Nelly Bencomo
Gordon Blair
Franck Fleurey
Cédric Jeanneret*

Content

Session 1: Fundamental Concepts

Meta-Modeling Runtime Models

Grzegorz Lehmann, Marco Blumendorf, Frank Trollman and Sahin Albayrak 1

Toward Megamodels at Runtime

Thomas Vogel, Andreas Seibel and Holger Giese 13

Session 2: Evaluation and Experimentation

Applying MDE Tools at Runtime: Experiments upon Runtime Models

Hui Song, Gang Huang, Franck Chauvel and Yanchun Sun 25

Run-Time Evolution through Explicit Meta-Objects

Jorge Ressoa, Lukas Renggli, Tudor Girba and Oscar Nierstrasz 37

Poster Session: Applications

A Model-Driven Approach to Graphical User Interface Runtime Adaptation

Javier Criado, Cristina Vicente-Chicote, Nicolás Padilla and Luis Iribarne 49

Monitoring Model Specifications in Program Code Patterns

Moritz Balz, Michael Striewe and Michael Goedicke 60

Separating Local and Global Aspects of Runtime Model Reconfiguration

Frank Trollmann, Grzegorz Lehmann and Sahin Albayrak 72

Using Models at Runtime For Monitoring and Adaptation of Networked Physical Devices: Example of a Flexible Manufacturing System

Mathieu Vallee, Munir Merdan and Thomas Moser 84

Monitoring Executions on Reconfigurable Hardware at Model Level

Tobias Schwalb, Graf Philipp and Klaus D. Müller-Glase 96

Knowledge-based Runtime Failure Detection for Industrial Automation Systems

Martin Melik-Merkumians, Thomas Moser, Alexander Schatten, Alois Zoitl and Stefan Biffel 108