4th Workshop on Models@run.time at MODELS 09

Denver, USA, October 5th 2009

Proceedings

Editors

Nelly Bencomo
Gordon Blair
Robert France
Cédric Jeanneret
Freddy Muñoz
Organization Committee

Nelly Bencomo  
Lancaster University, UK

Gordon Blair  
Lancaster University, UK

Robert France  
Colorado State University, USA

Cédric Jeanneret  
University of Zurich, Switzerland

Freddy Muñoz  
INRIA, France

Program Committee

Danilo Ardagna  
Politecnico di Milano, Italy

Betty Cheng  
Michigan State University, USA

Peter J. Clarke  
Florida International University, USA

Fabio M. Costa  
Federal University of Goias, Brazil

Anthony Finkelstein  
University College London, UK

Frank Fleuréy  
SINTEF, Norway

John Georgas  
Northern Arizona University, USA

Jeff Gray  
University of Alabama at Birmingham, USA

Oystein Haugen  
SINTEF, Norway

Jozef Hooman  
Embedded Systems Institute, Netherlands

Gang Huang  
Peking University, China

Paola Inverardi  
Università dell'Aquila, Italy

Jean-Marc Jezequel  
IRISA, France

Stéphane Ménoret  
THALES Group, France

Flavio Oquendo  
University of Brittany, France

Arnor Solberg  
SINTEF, Norway

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

Additional Reviewers

Franck Chauvel  
Peking University, China

Brice Morin  
IRISA, France

Daniel Schneider  
Fraunhofer IESE, Germany

Rui Silva Moreira  
Universidade Fernando Pessoa, Portugal
Preface

Welcome to the 4th Workshop on Models@run.time at MODELS 2009!

This document contains the proceedings of the 4th Workshop on Models@run.time that will be co-located with the ACM/IEEE 12th International Conference on Model Driven Engineering Languages and Systems (MODELS). The workshop will take place at the feet of the Rocky Mountains in Denver, USA, on the 5th of October, 2009. The workshop is organized by Nelly Bencomo, Robert France, Gordon Blair, Cédric Jeanneret and Freddy Muñoz.

From a total of 19 papers submitted 4 full papers, 6 posters and 2 demos were accepted. This volume gathers together all the 12 papers accepted at Models@run.time 09. 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 2009

Nelly Bencomo
Gordon Blair
Robert France
Cédric Jeanneret
Freddy Muñoz
Content

Session 1: The Use of Computational Reflection

Incremental Model Synchronization for Efficient Run-time Monitoring
Thomas Vogel, Stefan Neumann, Stephan Hildebrandt, Holger Giese and Basil Becker ........................................... 1

Generating Synchronization Engines between Running Systems and their Model-Based Views
Hui Song, Yingfei Xiong, Franck Chauvel, Gang Huang, Zhenjiang Hu and Hong Mei ............................................. 11

Leveraging Models From Design-time to Runtime. A Live Demo.
Brice Morin, Grégory Nain, Olivier Barais and Jean-Marc Jézéquel................................................................. 21

Session 2: Configuration Management

Evolving Models at Run Time to Address Functional and Non-Functional Adaptation Requirements
Andres J. Ramirez and Betty H.C. Cheng ................................................................................................................. 31

On the Role of Features in Analyzing the Architecture of Self-Adaptive Software Systems
Ahmed Elkhodary, Sam Malek and Naeem Esfahani ............................................................................................... 41

Models at Runtime: Service for Device Composition and Adaptation
Nicolas Ferry, Vincent Hourdin, Stephane Lavroche, Gaëtan Rey, Jean-Yves Tigli and Michel Riveill .............. 51

Poster Session

A Model-Driven Configuration Management Systems for Advanced IT Service Management
Holger Giese, Andreas Seibel and Thomas Vogel ...................................................................................................... 61

Design for an Adaptive Object-Model Framework: An Overview
Hugo Ferreira, Filipe Correia and Ademar Aguiar.................................................................................................. 71

Management of Runtime Models and Meta-Models in the Meta-ORB Reflective Middleware Architecture
Lucas L. Provensi, Fábio M. Costa and Vagner Sacramento ...................................................................................... 81

Modeling Context and Dynamic Adaptations with Feature Models
Mathieu Acher, Philippe Collet, Franck Fleurey, Philippe Lahire, Sabine Moisan and Jean-Paul Rigault .... 89

Statechart Interpretation on Resource Constrained Platforms: a Performance Analysis
Edzard Höfig, Peter H. Deussen and Hakan Coskun ............................................................................................ 99

Using Specification Models for RunTime Adaptations
Sébastien Saudrais, Athanasios Staikopoulos and Siobhan Clarke .......................................................................... 109