Welcome to the 10th Workshop on Domain-Specific Modeling

Preface

It has been 10 years since OOPSLA'01 hosted the first workshop of this series, then called Domain-Specific Visual Languages. In those years domain-specific techniques and applications have matured significantly, as has this workshop series and those who have participated in it. Industrial experience and several controlled experiments have consistently shown DSM to be more productive than general model based approaches. As Booch et al. have stated, "the full value of MDA is only achieved when the modeling concepts map directly to domain concepts rather than computer technology concepts."

The problem domains addressed in the workshop series have also matured and evolved over the last 10 years. Visual language applications in early instances of this series focused on graphical representations of mobile phone programming, constraint relationships, and data mapping. Domains have since spread to include robotic programming, software-defined radio, automotive systems, software product lines, complex systems, and even models themselves. As graph-rewriting techniques matured, workshop participants developed and evaluated visual specifications for transforming models into other models. Growing experience of building domain-specific languages converged towards a set of best practices for identifying problem domain concepts to use in a DSL.

The maturity of the presented work has continued to grow through the years. In early workshops, individual languages were presented and techniques were discussed. Throughout the years, workshop articles have looked at managing the complexity of created models, showing the impact on building industrial systems of significant size, and measuring the benefits of domain-specific techniques—to provide evidence that was quantitative, rather than anecdotal. The popularity of the workshop has been validated by the expansion of the workshop into a 2-day event in recent years, permitting time to hear the results of others, as well as actually spend time thinking and discussing new topics for research.

The visibility of the research has also grown over the years. Revised and expanded versions of workshop papers have appeared in journals such as *IEEE Software*, *IEEE Computer*, *Journal of Software and Systems Modeling*, *Journal of Visual Languages and Computing*, and *Communications of the ACM*. Conferences such as *Software Language Engineering* have sprung up around the idea of engineering languages, and previous organizers of this workshop have served as key instigators in those conference series.

Given the maturity of the organization, and growth of other venues, why is this workshop still held and attended? While other venues provide a place to discuss completed work, it is still important to have a place where still brewing ideas can be presented, and new collaborations can be forged through informal discussions and brainstorming. This is the role of the DSM workshop series, and this year's program provides another opportunity not just to hear what other people have

done, but to *work* on new ideas, and flesh out the most relevant problems for the next year — and the next decade — in this field.

This year we have received 27 submissions, of which 18 were accepted for publication. We have organized these papers to emphasize general areas of interest into which the papers loosely fit. Authors from both industry and academia have contributed research ideas that initiate and move forward the technical underpinnings of domain-specific modeling. Although many papers are cross cutting in their impact, the papers in these proceedings are categorized into the areas of *DSM cases, Transformation and testing, Language design,* and *Tools and meta-metamodels.*

An OOPSLA'00 birds-of-a-feather session brought together the organizers of this workshop series, and what was born was a venue for putting the "work" in "workshop," permitting the participants to leave with ideas for what to do next to improve the field. We hope that as you read these proceedings, you will likewise find the information valuable toward your understanding of the current state of the art in Domain-Specific Modeling, and where to go next.

Juha-Pekka Tolvanen, Jonathan Sprinkle, Matti Rossi, Steven Kelly

October 2010
Reno, Nevada

10th WORKSHOP ON DOMAIN-SPECIFIC MODELING

Program Committee

Pierre America, Philips
Robert Baillargeon, Panasonic Automotive Systems, USA
Krishnakumar Balasubramanian, The Mathworks Inc
Peter Bell, SystemsForge
Jorn Bettin, Sofismo
Jordi Cabot, INRIA
Philip T. Cox, Dalhousie University
Krzysztof Czarnecki, University of Waterloo
Brandon Eames, Sandia National Laboratories
Jeff Gray, University of Alabama
Ethan Jackson, Microsoft
Jürgen Jung, DHL
Benoit Langlois, Thales
Gunther Lenz, Microsoft
Shih-Hsi Liu, California State University, Fresno
Birger Moller-Pedersen, University of Oslo
Juha Pärssinen, VTT
Bernhard Rumpe, RWTH Aachen University
Arturo Sánchez, University of North Florida
Keng Siau, University of Nebraska-Lincoln
Kari Smolander, Lappeenranta University of Technology
Markus Völter, independent consultant

Organizing Committee

Juha-Pekka Tolvanen, MetaCase
Jonathan Sprinkle, University of Arizona
Matti Rossi, Aalto University School of Economics
Steven Kelly, MetaCase

Table of Contents

Tools and Meta-metamodels