The 11th Workshop on Domain-Specific Modeling

http://www.dsmforum.org/events/DSM11

SPLASH
23-24 October 2011
Portland, Oregon, USA
Objectives

- Intensive collaborative sessions
- Attempt to discuss, share and solve challenging problems
- See others’ work, DSM languages, tools etc.
- Have something to report to the community
- Have fun!
About past workshops

- BOF at OOPSLA’00
- First DSVL workshop at OOPSLA’01
  ...
- 10th DSM workshop at SPLASH’10

- Special issues on Domain-Specific Modeling
  - Software and Systems Modeling, coming 2012
What is Domain-Specific Modeling

- Captures domain knowledge (as opposed to code)
  - Uses domain abstractions
  - Applies domain concepts and rules as modeling constructs
  - Narrow down the design space
  - Focus on single range of products

- Lets developers design products using domain terms
  - Apply familiar terminology
  - Solve the RIGHT problems!
  - Solve problems only ONCE!

- Often aims at generation of full production code
Modeling domain vs. modeling code

- **Domain Idea**: Solve problem in domain terms
  - Map to code, implement
  - Map to UML

- **UML Model**: Generate, Add bodies

- **Components**: Generate calls to components

- **Assembler**: No map!

- **Finished Product**: Map to code, implement
How specific is domain-specific?

Example: Medicine mixing

Problem domain

Solution domain

The 11th Workshop on Domain-Specific Modeling (DSM’11)
Some demonstrated languages
How to implement languages, generators, frameworks

Done a few times before!

Domain Idea

- Domain metamodel
- Code generation
- Component library

Domain Model

- Generate calls to components

Components

Finished Product

- Expert (few)
- Normal (many)

Easy!
About submissions

- 16 submissions
- 46 authors
- From 10 countries
- 13 accepted
- 50 registered attendees

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DSM’11 PC

- Pierre America, Philips
- Robert Baillargeon, Panasonic Automotive Systems, USA
- Krishnakumar Balasubramanian, The Mathworks Inc
- Peter Bell, SystemsForge
- Jorn Bettin, Sofismo
- Philip T. Cox, Dalhousie University
- Krzysztof Czarnecki, University of Waterloo
- Abhishek Dubey, Vanderbilt University
- Brandon Eames, Sandia National Laboratories
- Ethan Jackson, Microsoft
- Jürgen Jung, DHL
- Steven Kelly, MetaCase
- Gunther Lenz, Microsoft
- Shih-Hsi Liu, California State University, Fresno
- Birger Moller-Pedersen, University of Oslo
- Bernhard Rumpe, RWTH Aachen University
- Arturo Sanchez, University of North Florida
- Keng Siau, University of Nebraska-Lincoln
- Kari Smolander, Lappeenranta University of Technology
- Andreas Svendsen, Sintef
- Massimo Tisi, INRIA
- Markus Völter, independent consultant
- Jing Zhang, Motorola Research

Organizing committee:

- Juha-Pekka Tolvanen, MetaCase
- Jonathan Sprinkle, University of Arizona
- Matti Rossi, Aalto Univ. of School of Economics
- Jeff Gray, University of Alabama
Schedule and format

Day 1
- 08:30 – Overview and introductions
- 09:00 – Paper presentations: Metamodeling
- 10:30 – Paper presentations: Language development support
- 12:00 – Lunch, group photo
- 14:00 – Paper presentations continue...
- 15:00 – Group work
- 17:00 – Group work reporting and discussion
- 17:30 – First day ends

Day 2
- 08:30 – Introduction
- 09:00 – Paper presentations: Experiences on DSM
- 11:00 – Paper presentations: Cases
- 12:00 – Lunch, group photo
- 14:00 – Paper presentations continue...
- 14:30 – Group work
- 16:30 – Group work reporting and discussion
- 17:00 – Wrap-up and closing
- 17:30 – Workshop ends
Publishing results

- Workshop web-site
  - www.dsmforum.org/events/DSM11
  - Papers
  - Presentations
  - Workgroup results
  - Photos

- Twitter: #dsm11

- ACM DL, bibliography dbs
Day 1: Sunday October 23
Metamodelling

8:30 Introduction

**Metamodelling**

9:00 Towards a Comparative Analysis of Meta-Metamodels  
Heiko Kern, Axel Hummel and Stefan Kuehne

9:30 Models for Forms  
Daniel Abler, Charles Crichton, James Welch, Jim Davies and Steve Harris

10:00 Break

**Language development support**

10:40 Towards Integration of Policies into DSMLs  
Frank Hernandez and Peter J. Clarke

11:10 Design Patterns for Metamodels  
Hyun Cho and Jeff Gray

11:40 A DSML for reversible transformations  
Mickael Kerboeuf and Jean-Philippe Babau

12:00 Lunch, Group photo
...continues
Day 1: Sunday October 23
Language Development Support

...continues

Language development support

14:00  A Pattern-based Approach to DSL Development
       Christian Schäfer, Thomas Kuhn and Mario Trapp

14:30  Bottom Up Creation of a DSL Using Templates and JSON
       Claude Petitpierre

15:00  Group work topic selection

15:30  Break

16:00  Group work
17:00  Group work reporting and discussion
17:30  First day ends
Day 2: Monday October 24
Experiences

8:30  Introduction to the second day

**Metamodelling**

9:00  **Advancing Generic Metamodels**
Henning Berg, Birger Møller-Pedersen and Stein Krogdahl

**Experiences on DSM**

9:30  **SharpLudus revisited: from ad hoc and monolithic digital game DSLs to effectively customized DSM approaches**
Andre Furtado, Andre Santos and Geber Ramalho

10:00 Break

10:30 **Guidance for Domain Specific Modeling in Small and Medium Enterprises**, Henning Agt, Ralf-Detlef Kutsche and Timo Wegeler

...continues
Day 2: Monday October 24

Cases

11:00 autoVHDL: A Domain-Specific Modeling Language for the Auto-Generation of VHDL Core Wrappers
Erica Jones and Jonathan Sprinkle

11:30 A Domain Specific Language for Enterprise Grade Cloud-Mobile Hybrid Applications
Ajith Ranabahu, Michael Maximilien, Amit Sheth and Krishnaprasad Thirunarayan

12:00 Lunch, Group photo

14:00 LattesMiner: a Multilingual DSL for Information Extraction from Lattes Platform
Alexandre D. Alves, Horacio Yanasse and Nei Y. Soma

14:30 Group work topic selection
14:50 Group work
15:30 Break while working ;-)
16:00 Group work continues
16:30 Group work reporting and discussion
17:00 Wrap-up and closing