



OMG's First Annual Model-Integrated Computing Workshop

Program Summary and Index

TUESDAY – October 12, 2004

TUTORIAL TRACKS

- 0900 - 1200 ***The Generic Modeling Environment (GME)***
Track 1 James Davis, Research Scientist, Vanderbilt University
- 0900 - 1200 ***The SAE AADL Standard: An Architecture Analysis & Design
Language for Embedded Real-time Systems***
Track 2 Peter Feiler, Sr. MTS, Software Engineering Institute & Edward Colbert, Pres., Absolute Software
- 1030 - 1045 Morning Refreshments
- 1200 - 1245 Lunch
- 1255 – 1300 ***Opening Remarks – Program Committee Chair***
Fred Waskiewicz, Director of Standards, Object Management Group
- 1300 – 1500 ***Session 1: Foundations***
Chair: Gabor Karsai, Associate Professor of EECS, Vanderbilt University/ISIS
- 1300 – 1330 01-1 **Domain-Specificity as a Key to Success in Model-Based Design**
Michael S. Moore, Mark Brooks, Greg Willden, Southwest Research Institute
Sandeep Neema, Institute for Software Integrated Systems
- 1330 – 1400 01-2 **Towards Formalizing Domain-specific Modeling Languages**
Kai Chen, Janos Sztipanovits, and Sandeep Neema, ISIS/Vanderbilt University
- 1400 – 1430 01-3 **Using Multiple Domain Specific Languages**
Steve Hickman, Senior Scientist, Honeywell
- 1430 – 1500 Session 1 Q&A - Discussion
- 1500 – 1515 Afternoon Refreshments
- 1515 – 1755 ***Session 2: Modeling Methodologies***
Chair: Dwayne Hardy, Architecture & Systems Engineering Advisor,
US DoD/Open Systems Joint Task Force
- 1515 – 1555 02-1 **A Component-Minded Route from CIM to Real Implementations,
And What Tools Can Do for It**
Manfred R. Koethe, CTO, 88solutions Corporation

- 1555 – 1635 02-2 **Managing Model Evolution in Model Driven Development**
Dan Matheson, Robert France, Roger Alexander, James DeWitt & Nathan McEachen,
Colorado State University
- 1635 – 1715 02-3 **Testing MDA Platform Independent Models**
Gregory T. Eakman, VP of Research, Pathfinder Solutions
- 1715 – 1755 02-4 **Integrating Model Checking and MIC with a QoS-aware Component Middleware Platform**
Gabriele Trombetti, Aniruddha Gokhale, Douglas C. Schmidt, Vanderbilt University
John Hatcliff, Jesse Greenwald, Gurdip Singh, Kansas State University
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WEDNESDAY - October 13, 2004

- 0900 – 0945 **Keynote: *The 'Software Wind Tunnel': How to Win the Big Government Contracts for Embedded Software Development***
John Bay, MoBIES Program Manager, DARPA
- 0945 – 1200 **Session 3: *Standards***
Chair: Manfred R. Koethe, CTO, 88solutions Corporation
- 0945 – 1015 03-1 **GME-MOF: The MOF-Based GME Metamodeling Environment**
Matthew J. Emerson, Research Assistant & Janos Sztipanovits, Professor, ISIS/Vanderbilt Univ.
- 1015 – 1045 03-2 **Specifying Security and Safety Requirements and Solutions with the AADL**
Edward Colbert, President, Absolute Software Co. & Jim E. Land, High Integrity Solutions
- 1045 – 1100 Morning Refreshments
- 1100 – 1130 03-3 **Dynamic Deployment and Configuration of Component-based Applications**
Akiko Yano & Yoshiaki Tamura Northeastern University, Graduate School of Engineering
- 1130 – 1200 Session 3 Q&A – Discussion
- 1200 – 1245 Lunch
- 1300 – 1500 **Session 4: *MIC Tools***
Chair: Fred Waskiewicz, Director of Standards, Object Management Group
- 1300 – 1330 04-1 **Model-Integrated Computing in the Large, Complex Projects**
Akos Ledecz, Senior Research Scientist, Vanderbilt University
- 1330 – 1400 04-2 **A Model-Based Approach to Designing QoS Adaptive Applications**
Jianming Ye & Joseph Loyall, Staff Scientists, BBN Technologies
Sandeep Neema, Sherif Abdelwahed, Nagabhushan Mahadevan, Vanderbilt University
- 1400 – 1430 04-3 **SeMA: A Model-driven Multi-Paradigm Integrated Simulation Framework For Analysis of Communication Networks**
Amogh Kavimandan & Aniruddha Gokhale, Vanderbilt University -
Marina Thottan, Wonsuck Lee & Ramesh Viswanathan, Bell Labs, Lucent Technologies
- 1430 – 1500 Session 4 Q&A - Discussion
- 1500 – 1900 ***Demonstration Area Open***

1500 – 1530 Afternoon Refreshments

1530 – 1730 **Session 5: *Tool Integration***

Chair: Fred Waskiewicz, Director of Standards, Object Management Group

1530 – 1600 05-1 **Building an MDA Toolchain**

Gregory T. Eakman, VP of Research, Pathfinder Solutions


1600 – 1630 05-2 **Development of Model-driven Integrated Support Architectures**

Stanley Ofsthun, Associate Technical Fellow, Boeing Phantom Works

1630 – 1700 05-3 **MDA Tool Integration for Development of Real-Time Embedded Systems**

Theckla Louchios & Christopher Andrews, Software Engineers, Lockheed Martin

1700 – 1730 Session 5 Q&A - Discussion

1730 – 1830 ***Demonstration Area Reception*** hosted by 

THURSDAY, October 14, 2004

0900 - 1200 **Session 6: *Modeling Languages***

Chair: Ben Watson, Research Program Manager, Lockheed Martin

0900 – 0930 06-1 **Embedded Control Systems Language for Distributed Processing (ECSL-DP)**

Sandeep Neema, Research Scientist & Gabor Karsai, Asst. Professor, ISIS, Vanderbilt University

0930 – 1000 06-2 **Pattern-Based Analysis of an Embedded Real-time System Architecture**

Peter Feiler, Senior MTS, Software Engineering Institute

1000 - 1030 Morning Refreshments

1000 - 1600 ***Demonstration Area Open***

1030 – 1100 06-3 **SRML, a Domain-specific Modeling Language**

Zsolt Kalmar, Sandeep Neema & Gabor Karsai, Institute for Software Integrated Systems
Michael S. Moore & Mark Brooks, Southwest Research Institute

1100 – 1130 06-4 **Embedded Systems Modeling Language and End-to-End Development Tool Chain**

Feng Shi, Sandeep Neema, Gabor Karsai, Zsolt Kalmar, Attila Vizhanyo, Aditya Agrawal,
ISIS/Vanderbilt University

1130 – 1200 Session 6 Q&A - Discussion


1200 - 1245 Lunch

1330 – 1530 **Session 7: *Transformations***

Chair: Ben Watson, Research Program Manager, Lockheed Martin

1330 – 1400 07-1 **A Meta-model based Model Transformation Tool: GreAT**

Attila Vizhanyo, Gabor Karsai, Aditya Agrawal, Feng Shi, Zsolt Kalmar & Sandeep Neema
Institute for Software-Integrated Systems, Vanderbilt University

- 1400 – 1430 07-2 **MIC – Scaling with Multiple Languages and Multiple Models**
Sandeep Neema, Shweta Shetty, Ted Bapty, ISIS, Vanderbilt University
- 1430 – 1500 07-3 **Concern Separation in Model Integrated Computing**
Jeff Gray, Assistant Professor, University of Alabama at Birmingham
Aniruddha Gokhale, Assistant Professor, Vanderbilt University
- 1500 – 1530 Session 7 Q&A - Discussion
- 1530 – 1600 Afternoon Refreshments
- 1600 – 1730 **Panel: *Semantic Foundation for Model Integrated Computing***
Moderator: Janos Sztipanovits, Professor, ISIS/Vanderbilt University
- 1730 - 1930 ***Workshop Reception*** hosted by 
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FRIDAY, October 15, 2004

- 0830 - 1030 **Session 8: *Model Based Synthesis***
Chair: Sandeep Neema, Research Scientist, ISIS, Vanderbilt University
- 0830 – 0900 08-1 **Software Producibility Using Model-Based Design, Analysis and Synthesis of Real-time Systems**
Raj Rajkumar, Professor, Carnegie Mellon University
- 0900 – 0930 08-2 **Model-based Code Generation**
Jesung Kim, Researcher, University of Pennsylvania
- 0930 – 1000 08-3 **Transformation of Executable Platform Independent Models**
Bruce Levkoff, Principal Consultant, Pathfinder Solutions
- 1000 – 1030 Session 8 Q&A – Discussion
- 1030 – 1045 Morning Refreshments
- 1045 - 1245 **Session 9: *MIC Applications and Case Studies I***
Chair: Michael S. Moore, Senior Research Engineer, Southwest Research Institute
- 1045 – 1125 09-1 **Model-Integrated Development of Sensor Network Applications**
Sebestyen Dora, Miklos Maroti, Peter Volgyesi & Akos Ledeczi,
Institute for Software Integrated Systems, Vanderbilt University
- 1125 – 1205 09-2 **A Model-Integrated Design Tool for Polymorphous Embedded Systems**
Brandon Eames & Esteban Osses, Research Assistants, Institute for Software Integrated Systems,
Vanderbilt University
- 1205 – 1245 09-3 **Experiences in Developing Model-Integrated Tools and Technologies for Large-Scale Fault Tolerant Real-Time Embedded Systems**
Steven G. Nordstrom, Institute for Software Integrated Systems, Vanderbilt University

1245 - 1330 Lunch

1345 - 1545 **Session 10: Case Studies/Experience Reports II**

Chair: Michael S. Moore, Senior Research Engineer, Southwest Research Institute

1345 – 1425 10-1 **A Learning Technology Application of Model Integrated Computing**

Larry Howard, Sr. Research Scientist, Institute for Software Integrated Systems, Vanderbilt U.

1425 – 1505 10-2 **Applying MDA to Constrained Environments**

Gregory T. Eakman, VP of Research, Pathfinder Solutions

1505 – 1545 10-3 **Applying Domain-Specific Modeling Languages to Develop Distributed, Real-time, and Embedded Systems**

Krishnakumar Balasubramanian, Jaiganesh Balasubramanian, Jeff Parsons, Aniruddha Gokhale & Douglas C. Schmidt, Vanderbilt University

1545 - 1550 Wrap-up / Closing Remarks
