



# Real-time and Embedded Systems Workshop

Arlington, VA USA - July 11-14, 2005

## *Program Summary – Presentation Times*

### MONDAY – July 11, 2005

#### TUTORIAL TRACKS

- 0900 - 1230 ***Real-time CORBA***  
Track 1 Kevin Buesing, Mentoring Engineer, Objective Interface Systems
- 1030 - 1230 ***Building and Implementing Concurrent Specifications***  
Track 2 Cortland Starrett, Engineering Manager & Stephen Mellor, Chief Scientist, Mentor Graphics
- 1015 - 1045 Morning Refreshments
- 1230 - 1315 Lunch
- 1330 – 1730 ***Using the Lightweight CORBA Component Model to Develop Distributed Real-time and Embedded Applications (Part 1)***  
Track 1 Douglas C. Schmidt, Professor of Computer Science, Vanderbilt University  
Frank Pilhofer, Member of Technical Staff, Mercury Computer Systems
- 1330 – 1730 ***MDA in Eclipse for Embedded and High Performance Systems***  
Track 2 Presenter: Peter J. Fontana, President, Pathfinder Solutions
- 1500 - 1515 Afternoon Refreshments
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### TUESDAY - July 12, 2005

#### TUTORIAL TRACKS

- 0900 - 1200 ***Using the Lightweight CORBA Component Model to Develop Distributed Real-time and Embedded Applications (Part 2)***  
Track 1 Douglas C. Schmidt, Professor of Computer Science, Vanderbilt University  
Frank Pilhofer, Member of Technical Staff, Mercury Computer Systems
- 0900 - 1200 ***Data Distribution Service***  
Track 2 Victor Giddings, Senior Scientist, Objective Interface Systems, Inc.
- 1015 - 1045 Morning Refreshments
- 1200 - 1245 Lunch
- 1255 – 1300 ***Opening Remarks – Program Committee Chair***  
Andrew Watson, Vice President & Technical Director, Object Management Group

- 1300 – 1530 **Session 1: *Design Techniques for Real-time and Embedded Applications***  
Chair: Andrew Watson, Vice President & Technical Director, Object Management Group
- 1300 – 1337 **Model-Driven QoS Provisioning Techniques for CCM DRE Systems**  
Stoyan Paunov, Gan Deng, Douglas C. Schmidt, and Anirudha Gokhale, Vanderbilt University
- 1338 – 1415 **Applying MDD, Generative Programming and Agile Software Techniques to the SDR Domain** Bruce Trask, Architect, PrismTech
- 1415 – 1452 **A Performance Modeling and Simulation Approach to Software Defined Radio**  
Shawkang Wu, Ph.D., Scientist & Long Ho, Senior Software Engineer, The Boeing Company
- 1453 – 1530 **Leveraging Agile Software Design Techniques in the Implementation of SDRs**  
Vincent Rivas, MTS & Joseph N Frisina, Manager-Advanced Software Dev., BAE Systems
- 1500 – 1900 ***Demonstration Area Open***
- 1530 – 1600 Afternoon Refreshments
- 1600 – 1800 **Session 2: *High Assurance***  
Chair: Dock Allen, Lead Software Systems Engineer, MITRE
- 1600 – 1630 **High Assurance CORBA and DDS Profiles**  
Victor Giddings, Senior Scientist, Objective Interface Systems, Inc.
- 1630 – 1700 **Multiple Independent Levels of Safety and Security: High Assurance Architecture**  
Gordon Uchenick, Mentor/Principal Engineer, Objective Interface Systems, Inc.
- 1700 – 1730 **Living Realistically with Nondeterminism in Fault-Tolerant Middleware**  
Joseph G. Slember and Priya Narasimhan, Carnegie Mellon University
- 1730 – 1800 Session 2 Q&A and Discussion
- 1800 – 1900 ***Demonstration Area Reception***

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## WEDNESDAY, July 13, 2005

- 0900 - 1200 **Session 3: *Experiences with COTS Implementations of the Data Distribution Service (DDS)***  
Chair: Steve Jennis, SVP, Corporate Development, PrismTech
- 0900 – 0930 **CORBA / DDS - Competing or Complementary Technologies?**  
Ramzi Karoui, EMEA Technical Supervisor, PrismTech
- 0930 – 1000 **OMG-DDS "Exploiting The Potential"**  
Hans van 't Hag, Product Manager Middleware, Thales Naval Netherlands
- 1000 – 1030 **Open Architecture Computing Environment: DDS Middleware Benchmarking**  
Bruce McCormick, Engineer, EG&G Inc. & Leslie Madden, Technical Lead Scientist, Naval Surface Warfare Center Dahlgren Division
- 1000 - 1600 ***Demonstration Area Open***

- 1030 - 1100 Morning Refreshments
- 1100 – 1130 **Data Consistency with the SPLICE Middleware**  
Leslie Madden Technical Lead Scientist & Chad Offenbacker, Scientist,  
Naval Surface Warfare Center Dahlgren Division
- 1130 – 1200 Session 3 Q&A and Discussion
- 1200 – 1230 ***Sponsor Presentation – PrismTech***
- 1230 - 1315 Lunch
- 1330 – 1400 ***Sponsor Presentation – BAE Systems***
- 1400 – 1600 ***Session 4: Real-time Java: The New World of RTSJ***  
Chair: Joseph M. Jacob, Senior Vice President, Objective Interface Systems, Inc.
- 1400 – 1440 **Experience Migrating a Representative Naval Combat Systems Application to RT Java**  
Tim Childress, Scientist & Barbara Doyal, Lead Scientist,  
Naval Surface Warfare Center Dahlgren Division
- 1440 – 1520 **Experiences in Developing a Real-Time Java Object Request Broker**  
John Russell, Product Manager, PrismTech
- 1520 – 1600 **Recommendations for a CORBA Language Mapping for RTSJ**  
Victor Giddings, Senior Scientist, Objective Interface Systems
- 1600 – 1630 Afternoon Refreshments
- 1630 – 1800 ***Panel: Real-time Java***  
Moderator: Joseph M. Jacob, Senior Vice President, Objective Interface Systems, Inc.
- Panelists: Dr. David F. Bacon, Research Staff Member, IBM's T.J. Watson Research Center  
Dennis Govoni, Technical Director, Sun Microsystems Inc.  
Steve Kautz, Ph.D., Senior Software Engineer, Aonix  
Additional Panelists TBA

1800 - 2000 ***Workshop Reception***

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## THURSDAY, July 14, 2005

- 0900 - 1215 ***Session 5: Real-time Middleware***  
Chair: Doug Jensen, Consulting Scientist, MITRE Corporation
- 0900 – 0930 **The COMPARE Project: Component-based Approach for Real-time & Embedded Systems**  
The COMPARE Consortium - Presenter: Vincent Seignole, Engineer, THALES
- 0930 – 1000 **A QoS-aware Deployment & Configuration Engine for Component-Based DRE Systems**  
Gan Deng, Jaiganesh Balasubramanian, Arvind Krishna, William R. Otte,  
Krishnakumar Balasubramanian, Anirudha Gokhale, and Douglas Schmidt, ISIS,  
Vanderbilt University & Nanbor Wang, Tech-X Corp
- 1000 – 1030 **Simplifying the Development of QoS-aware EJB Applications via Model-Integrated Computing**

Jules White, Douglas Schmidt and Aniruddha Gokhale, Department of EECS, Vanderbilt University

- 1030 - 1045 Morning Refreshments
- 1045 – 1115 **Techniques for Dynamic Swapping in the Lightweight CORBA Component Model**  
Jaiganesh Balasubramanian, Gan Deng, Balachandran Natarajan, Aniruddha Gokhale, and Douglas Schmidt, Department of EECS, Vanderbilt University
- 1115 – 1145 **Evaluating Adaptive Resource Management for Distributed Real-Time Embedded Systems**  
Nishanth Shankaran, Xenofon Koutsoukos, Douglas C. Schmidt, & Aniruddha Gokhale, EECS Dept., Vanderbilt University
- 1145 – 1215 Session 5 Q&A and Discussion
- 1215 - 1300 Lunch
- 1315 - 1435 **Session 6: *Middleware for Specialized Devices***  
Chair: Gordon Uchenick, Mentor/Principal Engineer, Objective Interface Systems
- 1315 – 1355 **Using CORBA on DSPs, FPGAs & Microcontrollers - Synthesizing an Ubiquitous SCA Machine in Soft-Radio Devices**  
Andrew Foster, Product Manager, PrismTech
- 1355 – 1435 **Middleware for DSPs and FPGAs**  
Bill Beckwith, CEO/CTO, Objective Interface Systems
- 1435 - 1450 Afternoon Refreshments
- 1450 - 1620 **Session 7: *Protocols***  
Chair: Douglas C. Schmidt, Professor of Computer Science, Vanderbilt University
- 1450 – 1520 **Practical Experiences Using the OMG's Extensible Transport Framework (ETF) Under a Real-Time CORBA ORB to Implement QoS Sensitive Custom Transports**  
Andrew Foster, Product Manager, PrismTech
- 1520 – 1550 **The Time Triggered (TT) Ethernet**  
Astrit Ademaj, Hermann Kopetz, Petr Grillinger & Klaus Stainhammer, Vienna University of Technology
- 1550 – 1620 Session 7 Q&A and Discussion
- 1620 – 1630 ***Closing Remarks – Program Committee Chair***  
Andrew Watson, Object Management Group