

Workshop on Foundations and Applications of Component-based Design

Seoul
October 26, 2006

9:00 Opening

Edward A. Lee, UC Berkeley (invited talk)

Causality Interfaces for Actor Networks

9:50 Sankalita Saha, Dong-Ik. Ko, and Shuvra S. Bhattacharyya, University of Maryland

A Meta-modeling Framework for Dynamic Reconfiguration of Dataflow Graphs

10:10 coffee break

10:40 Janos Sztipanovits, Institute for Software Integrated Systems (ISIS)

Towards the Compositional Specification of Semantics for Heterogeneous Domain-Specific Modeling Languages

11:00 Ingo Stierand and Werner Damm, University of Oldenburg

Cyclic Timed Interfaces

11:20 Thomas A. Henzinger, EPFL and UC Berkeley, and Slobodan Matic, UC Berkeley

An Interface Algebra for Real-Time Process Graphs

11:40 Hans-Gerhard Gross and Arjan van Gemund, Delft University of Technology

Bridging the Gap between Non-formal and Formal Software Component Requirements Specifications for Embedded System Engineering

12:00 lunch

15 minutes presentation followed by 5 minutes discussion

13:30 Joern Janneck, XILINX (invited talk)

Building a System from Actors

14:20 Kai Richter and Marek Jersak, Syntavision GmbH, and Arne Hamann and Rolf Ernst, Technical University of Braunschweig

Scheduling Analysis in the Automotive Design Flow

14:40 Hugo Andrade, John Breyer, Gerardo Garcia, and Jacob Kornerup, National Instruments Corporation

A Unified Graphical Representation and Tool for Design and Integration of Components in Heterogeneous Distributed Real-Time Systems

15:00 coffee break

15:30 Ananda Basu, Marius Bozga and Joseph Sifakis, VERIMAG, and Gregor Gößler, INRIA

Component-based Construction of Real-time Systems in BIP

15:50 Abhik Roychoudhury and P.S. Thiagarajan, National University of Singapore

A Verification Framework for Interacting Process Classes

16:10 Lothar Thiele, Ernesto Wandeler, and Nikolay Stoimenov, ETH Zurich

Real-Time Interfaces

16:30 Cheng-Yao Chen, Jason Schlessman, and Wayne Wolf, Princeton University

Towards Accessible Real-Time Distributed Embedded Vision Middleware

16:50 Discussion

18:00 End of Workshop

Specific challenges to be addressed:

Foundations and Expressiveness of System Description Formalisms

- What are the basic concepts for describing components?
- What types of component interaction that are directly supported?
- What kind of resources can be modeled (energy, memory, time,)?
- Encompassing synchrony and asynchrony

Component-based Design, Methods

- Verification: What kind of methods are or should be supported?

Compositional techniques?

- Design: What kind of methods are or should be supported?

Refinement/implementation relations

Tools, Application Scenarios and Relevant Case Studies

- Implementation methodologies supported and what kind of tools are available?
- Applications illustrating the above issues