September 29, 2004

9:00 – 10:00 Keynote address 5
Chair: Alberto Sangiovanni-Vincentelli
Alan Kay (HP, USA)

10:00 – 11:00 Session 8: Distributed Systems
Chair: Lucia Lo Bello
Loose Synchronization of Event-Triggered Networks for Distribution of Synchronous Programs
Jan Romberg and Andreas Bauer (Technical University of Munchen, Germany)
Reuse of Software in Distributed Embedded Automotive Systems
Bernd Hardung, Thorsten Kölzow, and Andreas Krüger (AUDI AG, Germany)

11:00 – 11:30 Coffee Break

11:30 – 12:30 Session 9: Formal Methods II
Chair: Sergio Yovine
A Model-Based Approach to Integrating Security Policies for Embedded Devices
Michael McDougall, Rajeev Alur, and Carl A. Gunter (University of Pennsylvania, USA)
Heterogeneous Reactive Systems Modeling: Capturing Causality and the Correctness of Loosely Time-Triggered Architectures (Lta)
A. Benveniste, B. Caillaud, L. Carloni, P. Caspi, and A. Sangiovanni-Vincentelli (INRIA/UC Berkeley)

12:30 – 14:00 Lunch

14:00 – 15:40 Session 10: Formal Languages
Chair: Joseph Sifakis
DECADE: A Higher-Order Synchronous Data-Flow Language
Jean-Louis Colaco, Alain Girault, Gregoire Hamon, and Marc Pouzet (Esterel Technologies, France)
Towards Direct Execution of Esterel Programs on Reactive Processors
P. S. Roop, Z. Salic, M. W. S Dayaratne, C. M. E. Chow, and J. S. Y. Tong (University of Auckland, NZ)
A Methodology for Verifiable Generation of Combinatorial Circuits
Oleg Kiseliov, Kedar Suda, and Walid Taha (Rice University, USA)
Defining and translating a "safe" subset of Simulink/Stateflow into Lustre
N. Scaife, C. Sofronis, P. Caspi, S. Tripakis, and F. Maraninchi (VERIMAG, France)

15:40 – 16:00 Coffee Break

16:00 – 17:40 Session 11: Timing Analysis
Chair: Guillemin Bernat
Approximation of the Worst-Case Execution Time Using Structural Analysis
Matteo Corti and Thomas Gross (ETH Zurich, Switzerland)
Multiple Process Execution in Cache Related Preemption Delay Analysis
Jan Staschulat and Rolf Ernst (Technical University of Braunschweig, Germany)
An approach for integrating basic-retiming and software pipelining
Nowedine Chabini and Wayne Wolf (Royal Military College, Canada)
Reducing Program Image Size by Extracting Frozen Code and Data
Daniel Citron, Gadi Haber, and Roy Levin (IBM Research Labs in Haifa)

17:40 Closing remarks
September 27, 2004

9:00 – 9:30 Welcome and Opening Remarks

9:30 – 10:30 Keynote address 1
Chair: Alberto Sangiovanni-Vincentelli
Great Works For The 21st Century: A Critical Role for the Modern Research University
Richard Newton (University of California at Berkeley, USA)

10:30 – 11:00 Coffee Break

11:00 – 12:30 Session 1: Operating Systems
Chair: Daniel Mossé
Remote Customization of Systems Code for Embedded Devices
Sapan Bhatia, Charles Consel, and Calton Pu (INRIA, France)
Using resource reservation techniques for power-aware scheduling
Claudio Scordino and Giuseppe Lipari (Scuola Superiore Sant’Anna, Italy)
An Experimental Analysis of the Effect of the Operating System on Memory Performance in Embedded Multimedia Computing
Sangsoo Park, Yonghee Lee, and Heonshik Shin (Seoul National University, Korea)

12:30 – 14:00 Lunch

14:00 – 15:00 Keynote address 2
Chair: John Stankovic
Smart Furniture: A Platform for Context-Aware Embedded Ubiquitous Applications
Hideyuki Tokuda (Keio University, Japan)

15:00 – 15:50 Session 2: Verification
Chair: Tom Henzinger
Model Based Estimation and Verification of Mobile Phone Performance
Gopal Raghavan (Nokia Research Center, MA, USA)
Separation of Concerns: Overhead in Modeling and Efficient Simulation Techniques
G. Tang, Y. Watanabe, F. Balardin, and A. Sangiovanni-Vincentelli (UC Berkeley, USA)

15:50 – 16:15 Coffee Break

16:15 – 17:30 Session 3: Energy-aware systems
Chair: Luca Benini
Practical PACE for Embedded Systems
Ruixin Xu, Chenhui Xi, Rami Melhem, and Daniel Mossé (University of Pittsburgh, USA)
Energy-Efficient, Utility Accrual Scheduling under Resource Constraints for Mobile Embedded Systems
Huaisong Wu, Binoy Ravindran, E. Douglas Jensen, and Peng Li (Virginia Tech, USA)
Binary translation to improve energy efficiency through post-pass register re-allocation
Kun Zhan, Tao Zhan, and Santosh Pande (Georgia Institute of Technology, USA)

17:30 – 18:00 Business Meeting

19:00 Reception

September 28, 2004

9:00 – 10:00 Keynote address 3
Chair: John Stankovic
Embedded Databases
Kriti Ramamritham (IIT Bombay, India)

10:00 – 10:50 Session 4: Scheduling
Chair: Giuseppe Lipari
WRR-SCAN: A Rate-Based Real-Time Disk-Scheduling Algorithm
Cheng-Han Tsai, Edward T.-H. Chu, and Tai-Yi Huang (National Tsing Hua University, Taiwan)
Scheduling within temporal partitions: response-time analysis and server design
Luis Almeida, and Paulo Pedreiras (University of Aveiro, Portugal)

10:50 – 11:15 Coffee Break

11:15 – 12:30 Session 5: Programming Languages
Chair: Janos Sztipanovits
A Typed Assembly Language for Real-Time Programs
Thomas A. Henzinger and Christoph M. Kirsch (Univ. of California at Berkeley, USA)
Compiler Assisted Demand Paging for Embedded Systems with Flash Memory
C. Park, J. Lim, K. Kwon, J. Lee, and S. Lyul Min (Seoul National University, Korea)
Garbage Collection for Embedded Systems
David F. Bacon, Perry Cheng, and David Grove (IBM T.J. Watson Research Center, USA)

12:30 – 14:00 Lunch

14:00 – 15:00 Keynote address 4
Chair: Thomas Henzinger
Network Processors: A Progress Report
Nevin Heintze (Agere Systems, USA)

15:00 – 15:50 Session 6: Formal Methods I
Chair: Albert Benveniste
Reactive Process Networks
Marc Geilen and Twan Basten (Eindhoven University of Technology, NL)
An event detection algebra for reactive systems
Jan Carlson and Björn Lisper (Mälardalen University, Sweden)

15:50 – 16:20 Coffee Break

16:20 – 18:00 Session 7: System Design
Chair: Luis Almeida
Conservative Approximations for Heterogeneous Design
R. Passerone, J. R. Burch, and A. Sangiovanni-Vincentelli (Cadence Design Systems, Inc.)
Exploiting Prescriptive Aspects: A Design Time Capability
J. Stankovic, P. Nagaraddi, Z. Yu, Z. He, and B. Ellis (University of Virginia, USA)
Making Mechatronic Agents Resource-Aware to Enable Safe Dynamic Resource Allocation
S. Barmester, M. Gehlke, H. Giese, and S. Oberthür (University of Paderborn, Germany)
A Metrics System for Quantifying Operational Coupling in Embedded Computer Control Systems
DeJiu Chen and Martin Törngren (Royal Institute of Technology, Sweden)

18:00 – 18:30 Invited Talk
Chair: Joseph Sifakis
Embedded Systems in the EU’s R&D Programmes
Kostas Glinos (European Commission, Brussels)

19:30 Banquet