September 29, 2004

9:00 – 10:00 **Keynote address 5**
Chair: *Alberto Sangiovanni-Vincentelli*

"The Computer Revolution", "Computer Science", and "Software Engineering" Haven't Happened Yet
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 (Ltta)
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. Salcic, 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 Kiselyov, Kedar Swadi, 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: *Guillem 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
Noureddine Chabini and Wayne Wolf (Royal Military College, Canada)

Reducing Program Image Size by Extracing Frozen Code and Data
Daniel Citron, Gadi Haber, and Roy Levin (IBM Research Labs in Haifa)

17:40 **Closing remarks**

EMSOFT 2004

Pisa, Italy

Final Program

September 27	September 28	September 29
9:00-9:30 Welcome	**9:00-10:00 Keynote 3** Krithi Ramamritham	**9:00-10:00 Keynote 5** Alan Kay
9:30-10:30 Keynote 1 Richard Newton	**10:00-10:50 Session 4** Scheduling	**10:00-11:00 Session 8** Distributed Systems
10:30-11:00 Coffee Break	**10:50-11:15 Coffee Break**	**11:00-11:30 Coffee Break**
11:00-12:30 Session 1 Operating Systems	**11:15-12:30 Session 5** Programming Languages	**11:30-12:30 Session 9** Formal Methods II
12:30-14:00 Lunch Break	**12:30-14:00 Lunch Break**	**12:30-14:00 Lunch Break**
14:00-15:00 Keynote 2 Hideyuki Tokuda	**14:00-15:00 Keynote 4** Nevin Heintze	**14:00-15:40 Session 10** Formal Languages
15:00-15:50 Session 2 Verification	**15:00-15:50 Session 6** Formal Methods I	
15:50-16:15 Coffee Break	**15:50-16:20 Coffee Break**	**15:40-16:00 Coffee Break**
16:15-17:30 Session 3 Energy-aware systems	**16:20-18:00 Session 7** System Design	**16:00-17:40 Session 11** Timing Analysis
17:30-18:00 Business Meeting		
19:00- Reception	**19:30 Banquet**	**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. Yang, Y. Watanabe, F. Balarin, 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
Ruibin Xu, Chenhai Xi, Rami Melhem, and Daniel Mosse (University of Pittsburgh, USA)

Energy-Efficient, Utility Accrual Scheduling under Resource Constraints for Mobile Embedded Systems
Haisang 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
Krithi 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
Luís 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 (Malardalen 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. Burmester, M. Gehrke, 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**