19th Euromicro Conference on Real-Time Systems

ECRTS 2007 Final Program

July 3, Tuesday

Satellite workshops and tutorials

- **RTN - International Workshop on Real-Time Networks**
- **WCET - International Workshop on Worst-Case Execution Time Analysis**
- **OSPERT - International Workshop on Operating System Platforms for Embedded Real-Time Applications**
- **Tutorial - MARTE: A New Standard for Modeling and Analysis of Real-Time and Embedded Systems**

July 4, Wednesday

8:00-8:45: Registration

8:45-9:00: Opening

9:00-11:00: Session 1: Scheduling and schedulability Analysis

Chair: James H. Anderson

EDZL scheduling analysis
Michele Cirinei and Theodore P. Baker

The Space of EDF Feasible Deadlines
Enrico Bini and Giorgio Buttazzo

A Delay Composition Theorem for Real-Time Pipelines
Praveen Jayachandran and Tarek Abdelzaher

New Schedulability Conditions for Real-Time Multiframe Tasks
Wan-Chen Lu, Kwei-Jay Lin, Hsin-Wen Wei and Wei-Kuan Shih

11:00-12:00: Break

12:00-13:00: Keynote Talk

Chair: Tullio Vardanega

From Model-Driven Development to Model-Driven Engineering
Bran Selic, IBM Canada

13:00-14:30: Lunch

14:30-16:00: Work in Progress Session (WiP)

Chair: Samarjit Chakraborty

16:00-17:00: WiP Poster session + Break

17:00-18:30: Session 2: Multiprocessor scheduling

Chair: Alan Burns

The Global Feasibility and Schedulability of General Task Models on Multiprocessor Platforms
Nathan Fisher and Sanjoy Baruah

Integrating Hard/Soft Real-Time Tasks and Best-Effort Jobs on Multiprocessors
Bjoern Brandenburg and James Anderson

Tardiness Bounds for FIFO Scheduling on Multiprocessors
Hennadiy Leontyev and James Anderson

19:00: Reception

The reception will take place in the garden of the Scuola Superiore Sant'Anna, just outside the conference room.

20:00: Visiting the Leaning Tower

After the Reception, there will be a visit of the Leaning Tower, which is just at 5 minutes of walk from the Scuola Sant'Anna. The visit takes about 30 minutes and will be organized in groups of 25 people, starting at 20:00.

July 5, Thursday

9:00-11:00: Session 3: Control and energy management

Chair: Eduardo Tovar

Statistical QoS Guarantee and Energy-efficiency in Web Server Clusters
Luciano Bertini, Julius Leite and Daniel Mossé

Dynamic Speed and Sensor Rate Adjustement for Mobile Robotic Systems
Ala' Qadi, Steve Goddard, Jiangyang Huang and Shane Farritor

On Controllability and Feasibility of Utilization Control in Distributed Real-Time Systems
Xiaorui Wang, Yingming Chen, Chenyang Lu and Xenofon Koutsoukos

Thermal Faults Modeling using a RC model with an Application to Web Farms
Alexandre Ferreira, Daniel Mossé and Jae Oh

11:00-11:30: Break

11:30-12:30: Keynote talk

Chair: Hermann Härtig

Real-time Requirements of Media Control Applications
Francisco Gómez-Molinero, Visual Tools, Spain

12:30-14:00: Lunch

14:00-15:30: Session 4: Wireless network scheduling

Chair: Tarek Abdalzaher

A Time Division Beacon Scheduling Mechanism for IEEE 802.15.4/Zigbee Cluster-Tree Wireless Sensor Networks
Anis Koubâa, André Cunhà and Mário Alves

On Scheduling and Real-Time Capacity of Hexagonal Wireless Sensor Networks
Shashi Prabh and Tarek Abdelzaher

An Integrated Scheduling and Retransmission Proposal for Firm Real-time Traffic in IEEE 802.11e
Douglas Dími Demarch and Leandro Buss Becker

15:30-16:00: Break

16:00-17:30: Session 5: Timing analysis

Chair: Theodore P. Baker

Cache-Aware Timing Analysis of Streaming Applications
Samarjit Chakraborty, Tulika Mitra, Abhik Roychoudhury and Lothar Thiele

Predictable paging in real-time systems: a compiler approach
Isabelle Puaut and Damien Hardy

WCET-Directed Dynamic Scratchpad Memory Allocation of Data.
Jean-François Deverge and Isabelle Puaut

18:30: Guided Tour to Piazza Dei Miracoli

Guided tour to Piazza dei Miracoli, visiting the Duomo, the Battistero, and the Churchyard. The visit takes about one hour.

20:00: Banquet

A bus will leave at 20:00 from Piazza Manin (just across the arch near the Battistero) to Ristorante “Le Arcate”, located in the countryside of the Province of Pisa, inside the old walls of Villa Poschi.

In this year's edition, there will be a honorific Best Paper Award, and three Best Student Paper Awards. The first Best Student Paper Award is sponsored by Springer with USD 500. Evidence is sponsoring all three Best Student Paper Awards with a FLEX development board for each. In addition, a selection of best papers will be invited for a special issue of an international journal.

July 6, Friday

9:00-10:30: Session 6: Quality of service management

Chair: Marco Caccamo

Co-Scheduling Variable Execution Time Requirement Real-time Tasks and Non Real-Time Tasks
Abhishek Singh and Kevin Jeffay

Memory Resource Management for Real-Time Systems
Audrey Marchand, Patricia Balbastre, Ismael Ripoll, Miguel Masmano and Alfons Crespo

Probabilistic Admission Control to Govern Real-Time Systems under Overload
Claude-Joachim Hamann, Michael Roitzsch, Lars Reuther, Jean Wolter and Hermann Härtig

10:30-11:00: Break

11:00-11:30: Keynote talk

Chair: Michael González Harbour

Research Opportunities in the IST Thematic Priority of the 7th Framework Program
Mercè Griera i Fisa, European Commission

11:30-13:00: Session 7: Scheduling in networks and multicore platforms

Chair: Jean-Dominique Decotignie

On Dominating Set Allocation Policies in Real-Time Wide-Area Distributed Systems
Chengdu Huang, Tarek Abdelzaher and Xue Liu

Composition Techniques for Tree Communication Schedules
Madhukar Anand, Sebastian Fischmeister and Insup Lee

A Hybrid Real-Time Scheduling Approach for Large-Scale Multicore Platforms
John Calandrino, James Anderson and Dan Baumberger

13:00-14:30: Lunch

14:30-16:30: Session 8: Fixed-priority scheduling

Chair: Pascal Richard

Supporting Deliberative Real-Time AI Systems: A Fixed Priority Scheduling Approach
Yanching Chu and Alan Burns

Worst-case response time analysis of real-time tasks under fixed-priority scheduling with deferred preemption revisited
Reinder J. Bril, Johan J. Lukkien and Wim F.J. Verhaegh

Extending Rate Monotonic Analysis with Exact Cost of Preemptions for Hard Real-Time Systems
Patrick Meumeu Yomsi and Yves Sorel

Casting Preemptive Time Petri Nets in the Development Life Cycle of Real-Time Software
Laura Carnevali, Luigi Sassoli and Enrico Vicario

16:30: Concluding remarks