# RTSS 2001 – Final Program

## December 4, 2001

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>08:30 – 8:45</td>
<td>Welcome and Opening Remarks</td>
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<tr>
<td>08:45 – 10:15</td>
<td><strong>Session 1:</strong> Processor Scheduling</td>
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<tr>
<td>10:15 – 10:30</td>
<td>Coffee Break</td>
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<tr>
<td>10:30 – 12:00</td>
<td><strong>Session 2:</strong> Control Issues in Real-Time Systems</td>
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<tr>
<td>12:00 – 13:30</td>
<td>Lunch</td>
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<tr>
<td>13:30 – 15:00</td>
<td><strong>Keynote Speech 1:</strong> Alberto Sangiovanni Vincentelli</td>
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<td>15:00 – 15:30</td>
<td>Coffee Break</td>
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<tr>
<td>15:30 – 17:30</td>
<td><strong>Session 3:</strong> Energy-Aware and Embedded Systems</td>
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<tr>
<td>19:00</td>
<td>Banquet</td>
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## December 5, 2001

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<th>Time</th>
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<tbody>
<tr>
<td>08:30 – 10:00</td>
<td><strong>Session 4:</strong> Quality-Of-Service Issues</td>
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<tr>
<td>10:00 – 10:30</td>
<td>Coffee Break</td>
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<tr>
<td>10:30 – 12:00</td>
<td><strong>Session 5:</strong> Resource Management</td>
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<tr>
<td>12:00 – 13:30</td>
<td>Lunch</td>
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<tr>
<td>13:30 – 15:00</td>
<td><strong>Keynote Speech 2:</strong> Neil Gershenfeld</td>
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<td>15:00 – 15:30</td>
<td>Coffee Break</td>
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<tr>
<td>15:30 – 17:30</td>
<td><strong>Work-In-Progress Session</strong></td>
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<tr>
<td>17:30 – 18:00</td>
<td>TC meeting</td>
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## December 6, 2001

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<th>Time</th>
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<tbody>
<tr>
<td>08:30 – 10:00</td>
<td><strong>Session 6:</strong> Multiprocessor Scheduling</td>
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<tr>
<td>10:15 – 10:30</td>
<td>Coffee Break</td>
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<tr>
<td>10:30 – 12:00</td>
<td><strong>Session 7:</strong> Off-Line Analysis</td>
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<tr>
<td>12:00 – 13:30</td>
<td>Lunch</td>
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<tr>
<td>13:30 – 15:00</td>
<td><strong>Session 8:</strong> Design Methods and Tools</td>
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<tr>
<td>15:00 – 15:30</td>
<td>Coffee Break</td>
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<tr>
<td>15:30 – 17:30</td>
<td><strong>Session 9:</strong> Distributed Systems and Networks</td>
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<tr>
<td>17:30</td>
<td>Concluding Remarks</td>
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</table>
December 4, 2001

08:30 – 8:45  Welcome and Opening Remarks

08:45 – 10:15  Session 1: Processor Scheduling
Chair: Alan Burns

HLS: A Framework for Composing Soft Real-Time Schedulers
John Regehr and John A. Stankovic

Window-Constrained Real-Time Periodic Task Scheduling
Aloysius K. Mok Weirong Wang

Guaranteed On-Line Weakly-Hard Real-Time Systems
Guillem Bernat and Ricardo Cayssials

10:15 – 10:30  Coffee Break

10:30 – 12:00  Session 2: Control Issues in Real-Time Systems
Chair: Al Mok

Jitter Compensation for Real-Time Control Systems
Pau Marti, Gerhard Fohler, Krithi Ramamritham, and Josep M. Fuertes

Jitter Control in On-line Scheduling of Dependent Real-time Tasks
L. David, F. Cottet and N. Nissanke

Feedback Control Scheduling in Distributed Real-Time Systems
John A. Stankovic, Tian He, Tarek Abdelzaher, Mike Marley, Gang Tao and Sang Son

12:00 – 13:30  Lunch

13:30 – 15:00  Keynote Speech 1
Chair: John Stankovic

Embedded Software Design for Real-Time Applications
Alberto Sangiovanni Vincentelli - University of California at Berkeley

10:15 – 10:30  Coffee Break

15:30 – 17:30  Session 3: Energy-Aware and Embedded Systems
Chair: Hans Hansson

Minimizing Memory Utilization of Real-Time Task Sets in Single and Multi-Processor Systems-on-a-chip
Paolo Gai, Giuseppe Lipari, Marco Di Natale

Scheduling with Dynamic Voltage/Speed Adjustment Using Slack Reclamation in Multi-Processor Real-Time Systems
Dakai Zhu, Rami Melhem, Bruce Childers

Dynamic and Aggressive Scheduling Techniques for Power-Aware Real-Time Systems
Hakan Aydin, Rami Melhem, Daniel Mosse, Pedro-Mejia Alvarez

Adaptive Power-Fidelity in Energy-Aware Wireless Embedded Systems
Vijay Raghunathan, Paleologos Spanos and Mani B. Srivastava

19:00  Banquet
December 5, 2001

08:30 – 10:00 Session 4: Quality-Of-Service Issues
Chair: Daniel Mossé

- Quality-Assuring Scheduling --- Using Stochastic Behavior to Improve Resource Utilization
  Claude-Joachim Hamann Jork Löser Lars Reuther Sebastian Schönberg Jean Wolter Hermann Härtig

- Towards Compositionality in Real-Time Resource Partitioning Based on Regularity Bounds
  Aloysius K. Mok, Xiang (Alex) Feng

- Service Class Based Online QoS Management in Surveillance Radar Systems
  Chang-Gun Lee, Chi-Sheng Shih, Lui Sha

10:00 – 10:30 Coffee Break

10:30 – 12:00 Session 5: Resource Management
Chair: Sanjoy Baruah

- A Bandwidth Inheritance Algorithm for Real-Time Task Synchronization in Open Systems
  Gerardo Lamastra, Giuseppe Lipari, Luca Abeni

- Aperiodic Servers with Resource Constraints
  Marco Caccamo and Lui Sha

- Resource Sharing in Reservation-Based Systems
  Dionisio de Niz, Luca Abeni, Saowanee Saewong, and Ragunathan (Raj) Rajkumar

12:00 – 13:30 Lunch

13:30 – 15:00 Keynote Speech 2
Chair: Kevin Jeffay

- Programming Bits and Atoms
  Neil Gershenfeld - MIT Media Laboratory

15:00 – 15:30 Coffee Break

15:30 – 17:30 Work-In-Progress Session
Chair: Gerhard Fohler

17:30 – 18:00 TC Meeting
December 6, 2001

08:30 – 10:00  Session 6: Multiprocessor Scheduling  
Chair: Michael Gonzalez Harbour

On-line scheduling on uniform multiprocessors  
*Shelby Funk, Joel Goossens, Sanjoy Baruah*

Static-priority scheduling on multiprocessors  
*Bjorn Andersson, Sanjoy Baruah, Jan Jonsson*

Guaranteeing Pfair Supertasks by Reweighting  
*Philip Holman and James H. Anderson*

10:00 – 10:30  Coffee Break

10:30 – 12:00  Session 7: Off-Line Analysis  
Chair: Sang Lyul Min

Statistical Analysis of WCET for Scheduling  
*Stewart Edgar and Alan Burns*

Translating Off-line Schedules into Task Attributes for Fixed Priority Scheduling  
*Rada Dobrin, Gerhard Fohler, and Peter Puschner*

An Efficient Algorithm for Scheduling Instructions with Deadline Constraints on ILP Processors  
*Hui Wu and Joxan Jaffar*

12:00 – 13:30  Lunch

13:30 – 15:00  Session 8: Design Methods and Tools  
Chair: Andy Wellings

*Julio L. Medina Pasaje, Michael González Harbour, José M. Drake Moyano*

Rapid Re-engineering of Embedded Real-Time Systems via Cost-Benefit Analysis with K-Level Diagonal Search  
*Jungkeun Park, Minsoo Ryu, Seongsoo Hong, and Lucia Lo Bello*

Towards a Toolset for Architectural Design of Distributed Real-Time Control Systems  
*Jad El-khoury Martin Törngren*

15:00 – 15:30  Coffee Break

15:30 – 17:30  Session 9: Distributed Systems and Networks  
Chair: Luis Almeida

Fair Real-time Traffic Scheduling over A Wireless LAN  
*Maria Adamou, Sanjeev Khanna, Insup Lee, Insik Shin, Shiyu Zhou*

Differentiated Services with Statistical Real-Time Guarantees in Static-Priority Scheduling Networks  
*Shengguan Wang, Dong Xuan, Riccardo Bettati, and Wei Zhao*

End-to-end delay analysis for real-time distributed networks  
*Shu-Ngai Yeung John Lehoczky*

Measuring Distributed Durations with Stable Errors  
*António Casimiro, Pedro Martins, Paulo Veríssimo, Luís Rodrigues*