

**Advance Program: 12<sup>th</sup> International Workshop on Parallel  
and Distributed Real-Time Systems  
Santa Fe, New Mexico, April 26<sup>th</sup> and 27th, 2004**

**Monday, April 26, 2004**

**8:15 – 8:30 Welcome and Opening Remarks by Workshop and Program Chairs**

**8:30 – 9:30 WPDRTS 2004 Keynote Speech**

- *“Twelve Principles for the Design of Safety-Critical Real-Time Systems”*  
Hermann Kopetz, Technische Universitat, Vienna, Austria

**9:30 – 10:00 Coffee Break**

**10:00 – 12:00 Invited Paper Session: “Time/Utility Functions and Utility Accrual Scheduling”, organized by E. Douglas Jensen, MITRE**

- Raymond Clark, E. Douglas Jensen, and Nicolas Rouquette, *“Software Organization to Facilitate Dynamic Processor Scheduling”*
- F. Drews, L. Welch, D. Juedes, D. Fleeman, A. Bruening, K. Ecker and M. Hoefler, *“Utility-Function based Resource Allocation for Adaptable Applications in Dynamic Distributed Real-Time Systems”*
- Gerard Le Lann, *“Time-Utility Scheduling and Provably Correct Critical Computer-Based Systems”*
- Haisang Wu, Binoy Ravindran and E. Douglas Jensen, *“On the Joint Utility Accrual Model”*

**12:00 – 1:00 Lunch**

**1:00 – 3:30 General Paper Session I: Resource Management**

- Jeffery Hansen, Sourav Ghosh, Ragnathan Rajkumar and John Lehoczky, *“Resource Management of Highly Configurable Tasks”*
- David Fleeman, M. Gillen, A. Lenharth, M. Delaney, L. Welch, D. Juedes and C. Liu, *“Quality based Adaptive Resource Management Architecture (QARMA): A CORBA Resource Management Service”*
- David Juedes, Frank Drews, Lonnie Welch and David Fleeman, *“Heuristic Resource Allocation Algorithms for Maximizing Allowable Workload in Dynamic, Distributed Real-Time Systems”*
- Reinhard Seyer, Christian Siemers, Rainer Falsett, Klaus Ecker and Harald Richter, *“Robust Partitioning for Reliable Real-Time Systems”*
- Sethavidh Gertphol and Viktor Prasanna, *“Iterative Integer Programming Formulation for Robust Resource Allocation in Dynamic Real-Time Systems”*

**3:30 – 4:00 Coffee Break**

**4:00 – 6:00 General Paper Session II: Scheduling and Computation**

- Deming Liu and Yann-Hang Lee, *Pfair Scheduling Of Periodic Tasks With Allocation Constraints On Multiple Processors*
- UmaMaheswari Devi and James Anderson, *Improved Conditions for Bounded Tardiness under EPDF Fair Multiprocessor Scheduling*
- Michael Frisbie, Douglas Niehaus, Venkita Subramonian and Christopher Gill, *Group Scheduling in Systems Software*
- Qi Han, Matthew Ba Nguyen, Sandy Irani and Nalini Venkatasubramanian, *"Time-sensitive Computation of Aggregate Functions over Distributed Imprecise Data"*

**Tuesday April 27, 2004**

**8:30 – 9:30 IPDPS Plenary Session**

**9:30 – 10:00 Coffee Break**

**10:00 – 11:00 Invited Tutorial**

- *"The Need for Utility Accrual Scheduling in the JPL Mission Data System"*  
Kirk Reinholtz, Chief Programmer, Mission Data System, NASA JPL, USA

**11:00 – 12:00 General Paper Session III: System Synthesis**

- Sanjoy Baruah, *"Cost-efficient synthesis of real-time systems upon heterogeneous multiprocessor platforms"*
- Paulo Palazzari, Luca Baldini and Moreno Coli, *"Synthesis of Pipelined Systems for the Contemporaneous Execution of Periodic and Aperiodic Tasks with Hard Real-Time Constraints"*

**12:00 – 1:00 Lunch**

**1:00 – 2:00 General Paper Session IV: Middleware and Networks**

- Rainer Finocchiaro, Stefan Lankes and Andreas Jabs, *"Design of a Real-Time Corba Event Service customized for the CAN Bus"*
- Paulo Pedreiras and Luis Almeida, *"Message routing in multi-segment FTT networks: The Isochronous Approach"*

**2:00 – 3:30 Student Paper Session**  
**organized by Vana Kalogeraki, U. of California, Riverside, USA**

- Hoai Hoang, *“Real-Time Communication for Industrial Embedded Systems Using Switched Ethernet”*
- Sathish Gopalakrishnan, *“Managing Communication in Integrated Modular Architectures”*
- Talal Darwich, *“Pulse-modulated Radar Display Processor on a Chip”*
- Prashant Dewan, *“Peer-to-Peer Reputations”*
- Fang Chen, *“A Utility-based Approach to Scheduling Multimedia Streams in Peer-to-Peer Systems”*
- Murali Krishna Ramanathan, *“Increasing Object Availability in Peer-to-Peer Systems”*

**3:30 – 4:00 Coffee Break**

**4:00 – 5:00 Challenge Problem Session**  
**organized by Douglas Niehaus, University of Kansas, USA**

- Uwe Brinkschulte, Joergen Becker and Theo Ungerer, *“CARUSO - an Approach Towards a Network of Low Power Autonomic Systems on Chips for Embedded Real-time Applications”*

**5:00 – 6:00 Panel Session, “Static WCET Analysis vs. Measurement: What is the Right Way to Assess Real-Time Task Timing?”, organized by Lonnie Welch, Ohio University, USA, and Peter Puschner, Technische Universitat, Vienna, Austria**

- Christian Ferdinand, *“Worst Case Execution Time Prediction by Static Program Analysis”*
- Charles Cavanaugh, *“On Static WCET Analysis vs. Run-time Monitoring of Execution Time”*
- Frank Mueller, *“Timing Analysis: In Search of Multiple Paradigms”*
- Scott Brandt, *“The Case for Dynamic Real-Time Task Timing in Modern Real-Time Systems”*

**6:00 – 6:15 Closing Remarks**