

Final Program for
ISORC 2000

**The 3rd IEEE International Symposium on
Object-Oriented Real-time distributed Computing**

March 15 - 17, 2000
Sheraton Newport Beach
Newport Beach,
California, USA

Sponsored by:
IEEE Computer Society TC on
Distributed Processing

In cooperation with:
IFIP WG 10.4
OMG
IBM

Register early by downloading the registration form from the ISORC 2000 Web:
<http://dream.eng.uci.edu/isorc2k/>

Timetable

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| <p><u>March 15 (Wed)</u> 8:00 – 8:30 Registrations 8:30 – 8:45 Opening Remarks 8:45 – 9:35 Keynote Speech I 9:35 – 9:50 Break 9:50 – 11:50 Session 1 11:45 – 1:30 Group Luncheon 1:30 – 3:30 Session 2 3:30 – 3:50 Break 3:50 – 4:20 Session 3 4:20 – 5:50 Panel I 6:30 – 8:30 Banquet</p> <p><u>March 16 (Thu)</u> 8:00 – 8:50 Keynote Speech II 8:50 – 9:00 Break 9:00 – 11:00 Session 4A & 4B 11:00 – 11:10 Break 11:10 – 12:10 Session 5A & 5B</p> | <p>12:10 – 3:50 Group Luncheon on Ocean 3:50 – 5:20 Session 6A & 6B 5:20 – 5:30 Break 5:30 – 6:50 Panel II</p> <p><u>March 17 (Fri)</u> 8:00 - 9:30 Session 7A & 7B 9:30 - 9:45 Break 9:45 - 10:45 Session 8A & 8B 10:45 - 10:55 Break 10:55 - 12:15 Panel III 12:15 - 1:30 Lunch Break 1:30 - 2:30 Session 9A & 9B 2:30 - 2:45 Break 2:45 - 4:15 Session 10A & 10B 4:20 - 4:40 Closing remarks (including Future Plan)</p> |
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Keynote speakers: Dr. James Rumbaugh, Rational Fellow
Dr. Richard M. Soley, Chairman of OMG

Detailed Schedule

March 15, 2000 Wednesday

8:00 – 8:30 Registrations

8:30 – 8:45

Opening Remarks

8:45 – 9:35

Keynote Speech I:

Chair: Bran Selic, ObjectTime, Canada

Speaker: James Rumbaugh, Rational Fellow

9:35 – 9:50 Break

9:50 – 11:50

Session 1 Current Major Trends

Chair: Ray Paul, DoD, USA

G. Bollella, IBM, USA

The Real-Time Specification for Java: Details and Some Programming Examples (Invited)

D. Jensen, Mitre Corp., USA
Distributed Real-Time Java: A Proposal

K.H.(Kane) Kim and Juqiang Liu, U. of Calif., Irvine, USA
Deadline Handling in Real-Time Distributed Objects

H. Kopetz, M. Holzmann, W. Elmenreich, Technische Universität Wien, Austria
A Universal Smart Transducer Interface: TTP/A

11:45 – 1:30 Group Lunch (at the Hotel)

1:30 – 3:30

Session 2 Distributed Object Computing in Real-Time Settings

Chair: Al Sandlin, US Navy SPAWAR, USA

Michael Mock, Martin Gergeleit,

Edgar Nett, GMD and U. of Magdeburg

Monitoring Distributed Real-Time Activities in DCOM

Kimoon Kim, Gwangil Jeon and Seongsoo Hong, Seoul Nat'l U., Sunil Kim, Hong-Ik U., and Taehyung Kim, Hanyang U., Korea
Resource-Conscious Customization of CORBA for CAN-based Distributed Embedded Systems

Tatsuo Nakajima, Waseda U.
Dynamic Transport Protocol Selection in a CORBA System

Didier Le Tien, Olivier Villin, Christian Bac, Institut Nat'l des Telecomm., France
CORBA Application Tailored Manager for Quality of Service Support

3:30 – 3:50 Break

3:50 – 4:20

Session 3 Design Pattern

Chair: Ray Liuzzi, USAF Research Lab, USA

Irfan Pyarali and Carlos O'Ryan, Washington U., and Douglas C. Schmidt, U. of Calif., Irvine, USA
A Pattern Language for Efficient, Predictable, Scalable, and Flexible Dispatching Mechanisms for Distributed Object Computing Middleware

4:20 – 5:50

Panel I Technology Visions in the Real-Time Application Domain

Moderator: E. Douglas Jensen, Mitre Corp., USA

Panelists:

Jay Bayne, Johnson Control, USA
Kirk Rheinholtz, JPL, NASA, USA

Michael Masters, NSWC, US Navy, USA

Radu Popescu-Zeletin, TU Berlin, Germany

Thomas Skip Saunders, Mitre Corp., USA

6:30 – 8:30 Banquet (Hotel)

March 16, 2000 Thursday

8:00 – 8:50

Keynote Speech II:

Chair: C.V. Ramamoorthy, UCB, USA

Speaker: Richard M. Soley, Chairman, OMG

8:50 – 9:00 Break

9:00 – 11:00

Session 4A Object-Oriented Design (Parallel Session)

Chair: Edwin deJong, Hollandse Signaalapparaten, NL

Francis Bordeleau, Jeanpier P. Corriveau, Carleton U., and Bran Selic, ObjecTime Ltd., Canada
A Scenario-Based Approach to Hierarchical State Machine Design

Günther Graw, Peter Herrmann, Heiko Krumm, U. Dortmund
Verification of UML-based real-time system designs by means of cTLA

Yunming Wang, Jean-Pierre Talpin, Albert Benveniste, and Paul Le Guernic INRIA-IRISA, France
A semantics of UML state-machines using synchronous pre-order transition systems

Radu Grosu, Ingolf Kruger, and Thomas Stauner, Technische U. Munchen, Germany
Hybrid Sequence Charts

9:00 – 11:00

Session 4B Scheduling and Load Balancing (Parallel Session)

Chair: Frederica Darema, NSF, USA

V. Kalogeraki, P. M. Melliar-Smith, and L. E. Moser, U. of Calif., Santa Barbara, USA
Dynamic Scheduling for Soft Real-Time Distributed Object Systems

F. Sandrini, PDCC, F. Di Giandomenico, IEI Istitute del CNR, A. Bondavalli, CNUCE Institute del CNR, Italy, E. Nett, Otto von Guericke U. Magdeburg, Germany
Scheduling Solutions for Supporting Dependable Real-Time Applications

Allan K.Y. Wong, Hong Kong Polytechnic U., Hong Kong, and Tharam S. Dillon, Latrobe U., Australia
Load Balancing to Improve Dependability and Performance for Program Objects in Distributed Real-time Co-operation over the Internet

Takeiki Aizono, Hitachi SDL, Tohru Kikuno, Osaka U., Japan
Intelligent Scheduling based on Start Time Adjustment for Advanced Sequential Control Systems

11:00 – 11:10 Break

11:10 – 12:10 Session 5A Objects and Components for RT Systems (Parallel Session)

Chair: Arif Ghafoor, Purdue U., USA

Chanho Ryu, Hyeok Han, Young-kuk Kim, Seongil Jin, Chungnam National U., and Yongkeol Kim, Medical Junior College, Korea

Kernel Structuring using Time-Triggered Message Triggered Objects for Real-Time Active DBMS in Layered Architecture

Stephen S. Yau, Fariaz Karim, Arizona State University, USA
Component Customization for Object-Oriented Real-Time Distributed Software Development

11:10 – 12:10

Session 5B Industry Short Papers I: Applications (Parallel Session)

Chair: Makoto Takizawa, Tokyo Denki U., Japan

Tetsuo Hidaka, Takahiro Abe, Tomohiro Kokogawa, NTT R&D Center, Japan
NetLibra: An Advanced Digital Library System based on CORBA

Hirokazu Nagasawa, Nobuhiro Omori, Masakazu Nishino, NTT R&D Center, Japan
NetMars: Next-generation Digital Image Library System

Marion G. Ceruti and S. Joe McCarthy, Space and Naval Warfare Systems Center, USA
Establishing a Data-Mining Environment for Wartime Event Prediction with an Object-Oriented Command and Control Database

12:10 – 3:50 Group Luncheon on Ocean

3:50 – 5:20

Session 6A Real-time and Fault-tolerance in Distributed/Parallel Applications: Industrial Views (Parallel Session)

Chair: Michael Mock, GMD, Germany

Mihaela Cardei, Ionut Cardei, Rakesh Jha, Allalaghatta Pavan, Honeywell Tech Center, USA
Hierarchical Feedback

Adaptation For Real Time Sensor-based Distributed Applications

Janis Putman, Mitre Corp., USA
General Framework for Fault Tolerance from ISO Reference Model

Katsuya Tanaka, Hiroaki Higaki, Makoto Takizawa, Tokyo Denki U., Japan
Asynchronous Checkpointing Protocol for Distributed Object-Based Checkpoints

3:50 – 5:20

Session 6B Work in Progress (Short Papers: Parallel Session)
Chair: Stephen S. Yau, Arizona State U., USA

L. B. Becker, C. E. Pereira, UFRGS, Brazil, O. P. Dias, I. M. Teixeira, J. P. Teixeira, INESC, Portugal
MOSYS A Methodology for Automatic Object Identification from System Specification I

Richard Freedman, John Maurer, Victor Wolfe, Steve Wohlever, Bhavani Thuraisingham, MITRE Corp., Michael Milligan, U.S. Air Force Academy, USA
Benchmarking Real-time Distributed Object Management Systems for Evolvable and Adaptable Command and Control Applications

Hector A. Duran and Gordon S. Blair, Lancaster U., Great Britain
A Resource Management Framework for Adaptive Middleware

Razvan Jigorea, Sorin Manolache, Petru Eles, Zebo Peng, Linköping U., Sweden
Modelling of Real-Time Embedded Systems in an Object-Oriented Design Environment with UML

5:20 – 5:30 Break

5:30 – 6:50

Panel II: Fundamental R&D Issues in Real-Time Distributed Computing

Moderator: Insup Lee, U. Penn., USA

Panelists:

Michael Jones, Microsoft, USA
Kane Kim, UCI, USA
Hermann Kopetz, Tech U. of Vienna, Austria
Thomas F. Lawrence, USAF Lab, USA
Douglas Locke, TimeSys, USA
Bhavani Thuraisingham, Mitre Corp., USA

March 17, 2000 Friday

8:00 – 9:30

Session 7A QoS (Parallel Session)

Chair: Phillip Sheu, UCI, USA

Partha Pal, Joseph Loyall, Richard Schantz, John Zinky, Rich Shapiro, James Megquier, BBN Technologies, USA
Using QDL to Specify QoS Aware Distributed (QuO) Application Configuration

Zièd Choukair, Damien Retailleau, ENST Bretagne, France
Integrating QoS to Collaborative Distributed Virtual reality Applications

Vinny Cahill, Frank Siqueira, Trinity College Dublin, Ireland
An Open QoS Architecture for CORBA Applications

8:00 – 9:30

Session 7B Real-time Distributed Systems Frameworks (Parallel Session)

Chair: Michael Franz, UCI, USA

Laurent Pautet, Samuel Tardieu,

Ecole Nationale Supérieure des Telecommunications, France
GLADE: a Framework for Building Large Object-Oriented Real-time Distributed Systems

M. Saksena, P. Karvelas, Y. Wang, Concordia U., Canada
Automatic Synthesis of Multi-Tasking Implementations from Real-Time Object-Oriented Models

Husni Fahmi, Walid Aref, Mudassir Latif, Arif Ghafoor, Purdue U., Liang Hsu, Peiya Liu, Siemens Corp. Research, USA
Distributed Framework for Real-Time Multimedia Object Communication

Hossam I. Gharib, Ping-Wen Chen, Yasuro Kawata, Shi-Kuo Chang, U. of Pittsburgh, USA
Adlets Migration and Handling in a Distributed Object Environment (No presentation)

9:30 – 9:45 Break

9:45 – 10:45

Session 8A OS Support

(Parallel session)

Chair: Thomas F. Lawrence, USAF Research Lab, USA

Friedrich Schön, GMD FIRST, Wolfgang Schröder-Preikschat, Olaf Spinczyk, Ute Spinczyk, U. of Magdeburg, Germany
On Interrupt-Transparent Synchronization in an Embedded Object-Oriented Operating System

Kanaka Juvva, Carnegie Mellon U., USA
End-to-End Predictability in Real-Time Push-Pull Communications

9:45 – 10:45

Session 8B Object-oriented Design issues: Industrial Views (Parallel session)

Chair: Vinny Cahill, Trinity

College, Ireland

J. Jenny Li, J. Robert Horgan, Telcordia Technologies (formerly Bellcore), USA
Using SDL to Model an Object-Oriented Real-Time Software Architectural Design

J. Horst, NIST, USA
Real-Time and Object-oriented Issues for an Inspection Workstation Application

10:45 – 10:55 Break

10:55 – 12:15

Panel III: Design, Methods, and Tools for ORC

Moderator: Edgar Nett, U. of Magdeburg, Germany

Panelists:

Andrea Bondavalli, CNUCE, Italy
Bruce Douglass, iLogix, USA
Kelvin Nilsen, NewMonics, USA
Carlos E. Pereira, UFRGS, Brazil
Douglas Schmidt, UCI, USA
Bran Selic, ObjectTime, Canada

12:15 – 1:30 Lunch Break

1:30 – 2:30

Session 9A Dependability (Parallel Session)

Chair: Joerg Kaiser, U. of Ulm, Germany

Alexander Romanovsky, U. of Newcastle upon Tyne, Great Britain
An Exception Handling Framework for N-Version Programming in Object Oriented Systems

L. Rodrigues, Universidade de Lisboa, Portugal, R. Baldoni, U. of Rome, Italy, E. Anceaume, M. Raynal, IRISA Campus de Beaulieu, France
Deadline-Constrained Causal Order

1:30 – 2:30

Session 9B Industry Short Papers II (Parallel Session)
Chair: Luiz Bacellar, United Tech Research Center, USA

Elizabeth Chang, Darren Annal, Franz Grunta, ICC Software Development, Japan
A Large Scale Distributed Object Architecture - CORBA & COM for Real Time System

Ronald Schoop, Ralf Neubert, Schneider Automation GmbH, Germany
Agent Oriented Material Flow Control System Based on DCOM

Todd Lizambri, Fernando Duran, Shukri Wakid, NIST, USA
TCP Throughput and Buffer Management

2:30 – 2:45 Break

2:45 – 4:15
Session 10A Programming Paradigms for Real-Time Systems (Parallel Session)

Chair: Nalini Venkatasubramanian, UCI, USA

Andrea Savigni, Francesco Tisato, DISCO - Università di Milano - Bicocca
Real-Time Programming-in-the-Large The Case of Monitoring and Control Systems

J. Fischer, E. Holz, Humboldt-U. zu Berlin, Germany, B. Møller-Pedersen, Ericsson AS Norway
Structural and Behavioral Decomposition in Object Oriented Models

Khaja Qutubuddin, Dan Pease, Onondaga Community College, USA
A Real-Time Heterogeneous Distributed Computing Environment for Multi-Robot System

2:45 – 4:15
Session 10B Java for Real-time Systems (Parallel Session)

Chair: Michel Raynal, IRISA and U. Renne, France

Gerasimos Xydias, Jérôme Tassel, BT Advanced Comm Technology Centre, England
Experimentation in CPU control with Real-Time Java

M. Teresa Higuera-Toledano, Valerie Issarny, INRIA-Rocquencourt, Michel Banâtre, Gilbert Cabillic, Jean-Philippe Lesot, Frederic Parain, IRISA-INRIA, France
Java Embedded Real-Time Systems; an Overview of Existing Solutions

G.H. Hilderink, A.W.P. Bakkers, J.F. Broenink, U. of Twente, Netherlands
A Distributed Real-Time Java System Based on CSP

4:20 – 4:40
Closing remarks (including Future Plan)

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