

CONTENTS

Session 1

A. Goswami, M. Bell, M. Joseph, <i>University of Warwick</i> ISL: An Interval Logic for the Specification of Real-Time Programs	1
Zhou Chaochen, M.R. Hansen, A.P. Ravn, H. Rischel, <i>Technical University of Denmark</i> Duration Specifications for Shared Processors	21
J. Coenen, J. Hooman, <i>Eindhoven University of Technology</i> A Compositional Semantics for Fault-Tolerant Real-Time Systems	33

Session 2A

Mats Daniels, <i>Uppsala University</i> Modelling Real-Time Behaviour with an Interval Time Calculus	53
Odile Millet, <i>Ecole Normale Supérieure de Lyon</i> Multicycles and RTL Logic Satisfiability	73

Session 2B

Abha Moitra, <i>General Electric Company</i> Voluntary Preemption: a Tool in the Design of Hard Real-Time Systems	87
K.T. Narayana, <i>ORA Corporation</i> Observing Task Preemption in Ada 9X	107

Session 3

L. Breveglieri, A. Cherubini, S. Crespi-Reghizzi, <i>Politecnico di Milano</i> Real-Time Scheduling by Queue Automata	131
J. Davies, D. Jackson, S. Schneider, <i>Oxford University</i> Broadcast Communication for Real-Time Processes	149
R. de Lemos, A. Saeed, T. Anderson, <i>University of Newcastle upon Tyne</i> Analysis of Timeliness Requirements in Safety-Critical Systems	171

Session 4A

V. Yodaiken, K. Ramamritham, <i>University of Massachusetts</i> Verification of a Reliable Net Protocol	193
N. Shankar, <i>SRI International</i> Mechanical Verification of a Generalized Protocol for Byzantine Fault Tolerant Clock Synchronization	217

Session 5

- J. Rushby, *SRI International*
**Formal Specification and Verification of a Fault-Masking and
 Transient-Recovery Model for Digital Flight-Control Systems** 237
- B. Deylon, O. Maler, *INRIA/IRISA*
On Fault-Tolerant Symbolic Computations 259

Session 6A

- K. D. Heidtmann, *University of Hamburg*
Temporal Logic Applied to Reliability Modelling of Fault-Tolerant Systems 271

Session 6B

- P. Krishnan, *University of Canterbury, New Zealand*,
 P.D. Mosses, *Aarhus University*
Specifying Asynchronous Transfer of Control 291
- W. Janssen, J. Zwiers, *University of Twente*
Protocol Design by Layered Decomposition: A Compositional Approach 307

Session 7A

- R. Kurki-Suonio, K. Systä, *Tampere University of Technology*,
 J. Vain, *Estonian Academy of Sciences*
Scheduling in Real-Time Models 327
- Y. Naik, *University of Warwick*
A Temporal Approach to Requirement Specification of Real-Time Systems 341
- J.A. Plaice, *University of Ottawa*
RLucid, a General Real-Time Dataflow Language 363

Session 7B

- R. Cardell-Oliver, *University of Cambridge*
**A Mechanized Theory for the Verification of Real-Time Program Code
 uUing Higher Order Logic** 375
- C.J. Fidge, *University of Queensland*
Specification and Verification of Real-Time Behaviour Using Z and RTL 393
- D.J. Scholefield, H.S.M. Zedan, *University of York*
**TAM: A Formal Framework for the Development of
 Distributed Real-Time Systems** 411

Session 8

- M. Richard, O. Roux, *École Centrale Nantes*
**An Attempt to Confront Asynchronous Reality to
 Synchronous Modelization in the ESTEREL Language** 429
- F. de Boer, J. Hooman, *Eindhoven University of Technology*
The Real-Time Behaviour of Asynchronously Communicating Processes 451

Session 9A

- J.C.M. Baeten, J.A. Bergstra, *University of Amsterdam*
Asynchronous Communication in Real Space Process Algebra 473
- A. Jeffrey, *University of Göteborg*
Translating Timed Process Algebra into Prioritized Process Algebra 493
- Y. Ortega-Mallén, *Universidad Complutense, Madrid*
Operational Semantics for Timed Observations 507

Session 9B

- D. Murphy, GMD, *Schloss Birlinghoven*, D. Pitt, *University of Surrey*
Real-Timed Concurrent Refineable Behaviours 529
- H. Toetenel, J. van Katwijk, *Delft University of Technology*
**Stepwise Development of Model-Oriented Real-Time Specifications from
 Action / Event Models** 547

Supplement

- P. Coesmans, M.J. Wiecek, *University of Nijmegen*
**Formal Specification of Fault-Tolerant Real-Time Systems
 Using Minimal 3-Sorted Modal Logic** 571
- Y. Kesten, A. Pnueli, *The Weizmann Institute of Science*
Timed and Hybrid Statecharts and Their Textual Representation 591