

2015 IEEE International Symposium on Object/Component/Service-Oriented Real-Time Distributed Computing Workshops

(ISORCW 2015)

**Auckland, New Zealand
13-17 April 2015**



**IEEE Catalog Number: CFP1501K-POD
ISBN: 978-1-4673-7710-2**

2015 IEEE 18th International Symposium on Real-Time Distributed Computing Workshops

ISORCW 2015

Table of Contents

Message from the General Chairs.....	vii
Message from the Program Committee Chair.....	viii
Message from the Workshop Chair for SEUS 2015.....	ix
Message from the Program Committee for SORT 2015.....	xi

The 11th IEEE/IFIP Workshop on Software Technologies for Future Embedded and Ubiquitous Systems (SEUS 2015)

Session 1: Timing and Communication Issues for Multicore Processors and Applications

A Timed-Automata Based Middleware for Time-Critical Multicore Applications	1
<i>Dario Succi, Peter Poplavko, Saddek Bensalem, and Marius Bozga</i>	
Models of Communication for Multicore Processors	9
<i>Martin Schoeberl, Rasmus Bo Sørensen, and Jens Sparsø</i>	
Optimised Adaptation of Mixed-Criticality Systems with Periodic Tasks on Uniform Multiprocessors in Case of Faults	17
<i>Raimund Kirner, Saverio Iacovelli, and Michael Zolda</i>	

Session 2: Program Analysis and Context Awareness

Integer Range Analysis for Whitley on Embedded Systems	26
<i>David J. Pearce</i>	
Global and Thread-Local Activation of Contextual Program Execution Environments	34
<i>Markus Raab</i>	

Session 3: Design and Timing Analysis of Real-Time Systems

Addressing Non-functional Requirements for Embedded Applications with Platform Based Aspect Design	42
<i>Stefan Resmerita, Anton Poelzleitner, and Stefan Lukesch</i>	
Integrated Analysis of Temporal Behavior of Component-Based Distributed Real-Time Embedded Systems	50
<i>Pranav Srinivas Kumar and Gabor Karsai</i>	
A Time-Triggered Constraint-Based Calculus for Avionic Systems	58
<i>Sardaouna Hamadou, John Mullins, Abdelouahed Gherbi, and Sofiene Beji</i>	

Session 4: Novel Cache Architectures

Stack Caching Using Split Data Caches	66
<i>Carsten Nielsen and Martin Schoeberl</i>	
A Time-Predictable Instruction-Cache Architecture that Uses Prefetching and Cache Locking	74
<i>Bekim Cilku, Daniel Prokesch, and Peter Puschner</i>	

Sixth IEEE Workshop on Self-Organizing Real-Time Systems (SORT)

Session 1: Applications in Self-Organizing Real-Time Systems

Design and Evaluation of a Bio-Inspired, Distributed Middleware for a Multiple Mixed-Core System on Chip	80
<i>Andreas Lund, Benjamin Betting, and Uwe Brinkschulte</i>	
A Mobile Agent Migration Mechanism for Information Dissemination Scheme in VANETs Considering Entrance and Exit of Mobile Nodes	89
<i>Takeshi Hashimoto, Takuya Tsuji, Junichi Aoki, Tomoyuki Ohta, and Yoshiaki Kakuda</i>	
An Inter-Cluster Communication Scheme for Self-Organized Transmission Power Control in MANET Clustering	95
<i>Keita Kobayashi and Yoshiaki Kakuda</i>	

Session 2: Fundamentals in Self-Organizing Real-Time Systems

Design Methodology and Run-Time Management for Predictable Many-Core Systems	103
<i>Stefan Wildermann, Andreas Weichslgartner, and Jürgen Teich</i>	
Towards Formalized Model-Based Requirements for a Seamless Design Approach in Safety-Critical Systems Development	111
<i>Stefan Walter, Achim Rettberg, and Marcio Kreutz</i>	

Author Index	116
---------------------------	-----