



ICONS 2011

The Sixth International Conference on Systems

January 23-28, 2011 - St. Maarten,
The Netherlands Antilles

ICONS 2011 Editors

Leszek Koszalka, Wroclaw University of Technology, Poland

Daniela Dragomirescu, LAAS-CNRS / University of Toulouse, France

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2011) by International Academy, Research, and Industry Association (IARIA)
Please refer to the Copyright Information page.

Printed by Curran Associates, Inc. (2012)

International Academy, Research, and Industry Association (IARIA)
412 Derby Way
Wilmington, DE 19810

Phone: (408) 893-6407
Fax: (408) 527-6351

petre@aria.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

ICONS 1: EMBEDDED SYSTEMS AND SYSTEMS-ON-THE-CHIP I

Implementation of MCU Invariant I2C Slave Driver Using Bit Banging	1
<i>Arindam Halder, Ranjan Dasgupta, Jayakar Chepada, Nrusingh Prasad Dash</i>	
A Programmable Interconnection Network for Multiple Communication Patterns	6
<i>Vaclav Dvorak, Jiri Jaros</i>	
A Cyber-Physical System Design Approach.....	12
<i>Miroslav Sveda, Radimir Vrba</i>	
Event Driven Programming for Embedded Systems - A Finite State Machine Based Approach.....	19
<i>Nrusingh Prasad Dash, Ranjan Dasgupta, Jayakar Chepada, Arindam Halder</i>	

ICONS 2: EMBEDDED SYSTEMS AND SYSTEMS-ON-THE-CHIP II

Optimizing Collective Communications on the K-port Spidergon Network	24
<i>Jiri Jaros, Vaclav Dvorak</i>	
A Hardware-in-the-Loop Testing Platform Based on a Common Off-The-Shelf Non-Real-Time Simulation PC	30
<i>Daniel Ulmer, Steffen Wittel, Karsten Huenlich, Wolfgang Rosenstiel</i>	
Novel Modulo 2^n+1 Subtractor and Multiplier	36
<i>Dina Younes, Pavel Steffan</i>	
Real-time Component Labelling with Centre of Gravity Calculation on FPGA.....	39
<i>Abdul Waheed Malik, Benny Thörnberg, Xin Cheng, Najeem Lawal</i>	

ICONS 3: SYSTEMS ENGINEERING

Improved Performance of a Microstrip Antenna Array Using a Tree Structure Patch Fed by Electromagnetic Coupling.....	44
<i>Tomader Mazri, Fatima Riouch, Najiba El Amrani El Idrissi</i>	
Access Control for Coordinated Multi-antenna Cellular Architecture with Scheduling.....	48
<i>Xiaodong Xu, Dan Hu, Xiaofeng Tao, Zhiping Hao</i>	
Using Grounded Theory as a Supportive Technique for System Requirements Analysis.....	54
<i>Mohanad Halaweh</i>	
Mobile Agent for Orchestrating Web Services.....	60
<i>Charif Mahmoudi, Fabrice Mourlin</i>	

ICONS 4: SECURITY AND PROTECTION SYSTEMS I

Architecture Patterns for a Ubiquitous Identity Management System.....	66
<i>Anders Fongen</i>	
Instantaneous Autonomous Aerial Reconnaissance for Civil Applications	72
<i>Florian Segor, Axel Bürtle, Matthias Kollmann, Rainer Schönbein</i>	
Multifactor Authentication Device	77
<i>Jaroslav Kadlec, Radimir Vrba, Radek Kuchta</i>	

ICONS 5: SECURITY AND PROTECTION SYSTEMS II

Protect Critical Information Infrastructure Systems in Financial and Healthcare Sectors: Actor Network Theory	83
<i>Cheng-Chieh Huang, Ching-Cha Hsieh</i>	
Mobile RFID Mutual Authentication and Ownership Transfer	88
<i>Jia-Ning Luo, Ming Hour Yang</i>	

Intrusion Detection System for Wide Automation Network Based on the Ethernet Compatible Communication Protocols.....	95
<i>Jaroslav Kadlec, Radimir Vrba, Radek Kuchta</i>	

ICONS 6: SYSTEMS' THEORY AND PRACTICE

End-User Development Success Factors and their Application to Composite Web Development Environments.....	99
<i>David Lizcano, Fernando Alonso, Javier Soriano, Genoveva López</i>	
Towards Building Health Systems	109
<i>Elaine Lawrence, Karla Felix Navarro, Jaime Andres Garcia Marin, Christian Sax</i>	
Comparative Analysis of the Practice of Telecom Operators in the Realization of IPTV Systems Based on ITIL V3 Recommendations for the Supplier Management Process.....	115
<i>Anel Tanovic, Fahrudin Orucevic</i>	
An Approach to Service Deployment to the Service Cloud.....	122
<i>Juha Puttonen, Andrei Lobov, José Luis Martinez Lastra</i>	

ICONS 7: APPLICATION-ORIENTED SYSTEMS

Qualitative Assessment Dynamics For Trust Management in e-Business Environments.....	128
<i>Denis Trcek, Eva Zupancic</i>	
An Experimentation System for Bus Route Planning and Testing Metaheuristics Algorithms.....	134
<i>Krzysztof Golonka, Leszek Koszalka, Iwona Pozniak-Koszalka, Andrzej Kasprzak</i>	
Reconstruction Quality of Congested Freeway Traffic Patterns from Probe Vehicles Based on Kerner's Three-Phase Traffic Theory.....	139
<i>Jochen Palmer, Hubert Rehborn</i>	

ICONS 8: ADVANCED SYSTEMS

Innovation Process Managing Complexity through Financial Aspects.....	145
<i>Borut Likar, Peter Fatur</i>	
A Service-Oriented Monitoring System of Pressurized Air in Industrial Systems for Energy Awareness.....	150
<i>Piotr Rabeko, Andrei Lobov, Jose Luis Martinez Lastra</i>	
Contextualization of Learning Objects for Self-Paced Learning Environments.....	157
<i>Freimut Bodendorf, Kai-Uwe Götzelt</i>	
Author Index	