

PROCEEDINGS OF THE 2010 SPRING SIMULATION MULTICONFERENCE

11-15 April – Orlando, FL USA

2010 Spring Simulation Multiconference Books:

Book 1 - Agent-Directed Simulation Symposium (ADS)

Book 2 - 43rd Annual Simulation Symposium (ANSS)

Book 3 - 13th Communications & Networking Symposium (CNS)

Book 4 - Symposium on Theory of Modeling & Simulation – DEVS Integrative M&S Symposium (DEVS)

Book 5 - Emerging M&S Applications in Industry & Academia Symposium (EAIA)

Book 6 - High Performance Computing Symposium (HPC)

Book 7 - Military Modeling & Simulation Symposium (MMS)

Book 8 - Symposium on Simulation for Architecture & Urban Design (SimAUD)

Book 9 - 9th International Conference on Bond Graph Modeling & Simulation (ICBGM)

Production Editors:

Michael J. Chinni

Diane “DJ” Weed

Printed from e-media with permission by:

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



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

© 2010 SIMULATION COUNCILS, INC.

Responsibility for the accuracy of all statement in each paper rests solely with the author(s). Statements are not necessarily representative of, nor endorsed by, The Society for Modeling and Simulation International.

Printed by Curran Associates, Inc. (2010)

Permission is granted to photocopy portions of this publication for personal use and for the use of students provided credit is given to the conference and publication. Permission does not extend to other types of reproduction nor to copying for incorporation into commercial advertising nor for any other profit-making purpose. Other publications are encouraged to include 300- to 500-word abstracts or excerpts from any paper contained in this book, provided credits are given to the author and the conference. For permission to publish a complete paper write: The Society for Modeling and Simulation International (SCS), P.O. Box 17900, San Diego, CA 92177, USA.

Additional copies of the Proceedings are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571
curran@proceedings.com
www.proceedings.com/0128.html

OR

The Society for Modeling
and Simulation International
2598 Fortune Way, Ste I
Vista, CA 92081 USA

ISBN: 978-1-61738-204-8
PRINTED IN THE UNITED STATES

Table of Contents: DEVS

<u>A MDA-based Approach for the Development of DEVS/SOA Simulations</u>	...	4
<u>Performance Analysis Modeling Applied to Business Processes</u>	...	12
<u>A Stochastic DEVS Wind Turbine Component Model for Wind Farm Simulation</u>	...	20
<u>Meta-Simulation of Large WSN on Multi-core Computers</u>	...	28
<u>A Distributed Approach to the Simulation of Inherently Distributed Systems</u>	...	36
<u>Simulating Domain Specific Visual Models by Observation</u>	...	46
<u>An Agent-Based Approach to Modeling Yard Cranes at Seaport Container Terminals</u>	...	54
<u>Temporal Verification of RT-DEVS Models with Implementation Aspects</u>	...	63
<u>Using Time Stream Petri Nets over a Service Architecture for Workflow Modelling and Enactment</u>	...	71
<u>Verifying Trace Inclusion between an Experimental Frame and a Model</u>	...	79
<u>A DEVS Model For Demographic Microsimulation</u>	...	87
<u>MultipleWorlds: A Formalism For Simulation Based Design</u>	...	95
<u>SES-Based Ontological Process for High Level Information Fusion</u>	...	101
<u>Integrating Parallel DEVS and Equation-Based Object-Oriented Modeling</u>	...	111
<u>Comprehensive On-Chip Traffic Generator Model for SoC Design and Synthesis</u>	...	119
<u>System Entity Structure For XML Meta Data Modeling; Application to the Logistics</u>	...	127
<u>An Advanced Simulation Approach for Parallel DEVS with Ports</u>	...	132
<u>Synchronizing DEVS/SOA Simulator with Ping Monitoring Application</u>	...	140
<u>DEVS Based Plug-in Framework For Interoperability of Simulators</u>	...	147
<u>Designing an Interface for Real-Time and Embedded DEVS</u>	...	154

<u>Performance Evaluation of Test Process Based on Stochastic Models</u>	...	162
<u>Conservative DEVS - A Novel Protocol for Parallel Conservative Simulation of DEVS and Cell-DEVS Models</u>	...	168
<u>Activity Regions for the Specification of Discrete Event Systems</u>	...	176
<u>Reducing the State Space of Incompletely Specified Timed Moore Machines</u>	...	183
<u>Accelerating Large-scale DEVS-based Simulation on the Cell Processor</u>	...	191
<u>Rational Time-Advance DEVS (RTA-DEVS)</u>	...	199
<u>Uncovering DEVS Simulation Behaviour Throughout The Open Provenance Model</u>	...	207
<u>Agent-Based Stochastic Simulations of Shipboard Disease Outbreaks</u>	...	215
<u>U} Á•ā * Ä^•ā } Áæç{ }•Á ÖÖXÜÁ [á^ ā * Áæ áÁā ~ æā } Á/[]•</u>	...	223
<u>AnCaraS: a New Webometrics Web-Spider; G-DEVS-Based Validation of Concepts</u>	...	G G
<u>Adapting Forces Modeling and Simulation Applications for Use on High Performance Computational Systems</u>	...	G €
<u>Advanced IDE for Modeling and Simulation of Discrete Event Systems</u>	...	G ï