

Program for

2010 Summer Simulation Multiconference (SummerSim'10)

**Please note that there might be some minor changes in the final version
of this program!**

**Sponsored by SCS in cooperation with IEEE Communication Society and
ACM, Co-located with SISO Euro SIW**

July 11 - 14, 2010
Crowne Plaza; Ottawa, ON, Canada

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SCS VP Conferences
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Local Arrangement

Gabriel Wainer, Carleton University, Canada

In Cooperation with SISO

James McCall, Chair, Board of Directors
Duncan Miller, Sc.D., Executive Director, SISO
Stephen Swenson, AEGIS Technologies Group

INFORMATION

SummerSim'10 Registration

Sun., July 11 2:00 - 5:00 PM
Mon., July 12 7:00 AM - 5:00 PM
Tues., July 13 7:00 AM - 5:00 PM
Wed., July 14 7:00 AM - 12:00 PM

SummerSim'10 Exhibit Area

Ballroom Section A

The exhibit area will be open immediately following the SummerSim'10 keynote address according to the following schedule:

Mon., July 12 10:00 AM - 7:30 PM
Tue., July 13 10:00 AM - 5:00 PM
Wed., July 14 10:00 AM - 12:00 PM

Coffee Breaks

Ballroom Section A

Refreshments will be served in the Exhibit area at mid-morning and mid-afternoon session breaks according to the following schedule:

Mon., July 12 10:00 AM, 3:00 PM
Tues., July 13 10:00 AM, 3:00 PM
Wed., July 14 10:00 AM, 3:00 PM

Exhibitor Reception

Ballroom Section A

Mon., July 12 6:00 PM - 7:30 PM

Speakers' Breakfast

July 12-14 7:30 AM - 8:30 AM Room: Capitale

Breakfast is served for each speaker on the morning of his/her presentation.

Presenters meet with Track and Session Chairs at designated tables to discuss presentation of the day.

Admittance with Breakfast ticket only!

SummerSim'10/SISO Banquet: Pre-Paid River Boat Dinner

Tues., July 13 6:30 PM

The banquet is with advance purchase of the ticket. For reservation and info, please contact summerSim10@scs.org.

MEETINGS

SCS Executive Committee Meeting

Sat., July 10, 9:00 AM – 5:00 PM

Room: Chaudiere

SCS Board of Directors Meeting

Sun., July 11, 9:00 AM – 5:00 PM

Room: Panorama

M&SNet-MISS Joint Director's Meeting

Sun. July 11, 1:30 – 5:00 PM

Room: Seigniory

SummerSim'10 Preconference Meeting

Sun., July 11, 5:00 – 6:00 PM

Room: York

GCMS'10 Organizer's Meeting

Sun., July 11, 7:00 – 9:00 PM

Room: York

SCS Conference Board Meeting

Mon., July 12, 12:00 – 1:30 PM

Room: Capitale

SCS Education Board Meeting

Tues. July 13, 12:00 – 1:30 PM

Room: Capitale

SummerSim'11 Planning Committee Meeting

Tues., July 13, 12:00 – 1:30 PM

Room: York

SCS Publication Board Meeting

Wed., July 14, 12:00 – 1:30 PM

Room: Capitale

SCS Membership Board Meeting

Tues., July 13, 7:00 – 8:00 AM

Room: Capitale

SimSummit Meeting

Tuesday, July 13, 9:00 AM – 12:00 Noon

Room: Seigniory

TUTORIALS

Sunday, July 11, 1:30-3:00 PM

Room: York

Advanced Statistical Approaches for Network Anomaly Detection

Presented by Prof. Christian CALLEGARI, University of Pisa, Italy

Sunday, July 11, 1:30 – 5:00 PM

Room Chaudiere

Computer Assisted Exercises and Simulation

Presented by Dr. Erdal Cayirci

Tuesday, July 13, 3:30-6:00 PM

Room: Seigniory

The Simio Object Paradigm (beyond ARENA)

Presented by Emeritus Professor Ralph C. Huntsinger, Ph.D.
California State University, Chico-Humboldt USA

WORKSHOPS

M&S Education

Monday, July 12, 10:30 – 12:00 PM

Room: Seigniory

Organizer: Helena Szczerbicka, SCS VP of Education and Professor of Universität Hannover, Germany

M&S Body of Knowledge

Tuesday, July 13, 1:30 – 3:00 PM

Room Seigniory

Organizers: Bill Waite, Chairman and CTO, the AEGIS Technologies Group
Tuncer Ören, Emeritus Prof., Founding Director of M&SNet of SCS

POSTER TRACK

Tuesday, July 13, 1:00 – 2:00 PM

Ballroom Section A

and Wednesday, July 14, 9:00-10:00 AM

Organizers: Chair: Abdolreza Abhari, Ryerson University, Canada

Co-Chair: Mohammad Moallemi, Carleton University, Canada

Co-Chair: Yuri Boiko, Carleton University, Canada

KEYNOTE SPEAKERS

KEYNOTE SPEAKER 1



Mon., July 12, 9:00 – 10:00 AM

Ballroom Section B

DISTRIBUTED SIMULATION SYSTEM: A NECESSARY PUBLIC SECURITY AND SAFETY TESTBED FOR AN URBAN EMERGENCY PREPAREDNESS CLASS OF APPLICATIONS

Azzedine Boukerche, Director of PARADISE Research Laboratory
University of Ottawa, Canada

This talk will consist of an overview of the major research projects related to distributed simulation, distributed and collaborative virtual environment, context aware computing, vehicular networks and mobile computing, which are currently being investigated at PARADISE Research Laboratory at the University of Ottawa. Among the projects to be discussed are:

The design of large-scale distributed and mobile simulation system for an urban emergency preparedness class of applications using both location/context aware computing and the latest wireless networking technologies

Coverage and time synchronization problems in mobile and wireless ad hoc and sensor networks

LIVE testbed, a convergence of distributed simulation, distributed collaborative virtual environment and wireless sensors and vehicular technologies that is under development at PARADISE Research Laboratory for an emergency preparedness and response class of applications, and

SWiMNet, a high performance testbed that allows very detailed and realistic model specifications. It facilitates and enable to the evaluation and design of new protocols and applications for future generations of wireless vehicular and sensor network technologies.

Dr. A. Boukerche, is a Professor of Computer Science and hold a Canada Research Chair Position at the University of Ottawa. Prior to this, he was Faculty Member at the Dept. of Computer Sciences and Engineering, University of North Texas. He also worked as a Senior Research Scientist at Metron Corp. located in San Diego, California, and a

visiting scientist at Caltech/JPL-NASA, where he contributed to a project centered on the specification and verification of the software used to control interplanetary spacecraft operated by JPL/NASA Laboratory. He is the Founding Director of PARADISE Research Lab at uOttawa. His current research interests include distributed simulation, distributed collaborative virtual environment, wireless networks and mobile computing, Wireless Ad hoc and Sensor Networks, and vehicular networks. he is a Vice Chair of IEEE ComSoC Technical Committee for Ad Hoc and Sensor Networks.

He serves as an Associate Editor for the IEEE Transactions on Vehicular Technology, IEEE Transactions on Parallel and Distributed Systems, IEEE Wireless Communication Magazine, ACM/Springer Wireless Networks, Elsevier Ad Hoc Networks, Elsevier Int'l Journal on Pervasive and Mobile Computing, Wiley's Wireless Communication and Mobile Computing Journal, the Int'l Journal of Parallel and Distributed Computing (JPDC), Wiley's Security and Communication Networks Journal and serves as Associate Editor-in Chief of SCS Modeling and Simulation Magazine, Associate Editor. He serves as a General Chair of the 8th IEEE WoWMoM2010, Program Co-Chair for IEEE ISCC 2009, IEEE Globecom 2008- and 2009 Ad Hoc, Sensor and Mesh Networking Symposium, ICPP 2008, and the Steering Committee Chair for ACM/IEEE MSWiM. IEEE/ACM DS-RT and NTMS Conferences.

He was the recipient of several awards, including ICC 2008 and ICC 2009, IWCMC 2010, and IEEE/ACM PADS Best Paper Awards, The Ontario Distinguished Researcher Award, the prestigious Premier's Ontario Research Excellence Award, and the George S. Glinski Award for Excellence in Research.

KEYNOTE SPEAKER 2



Tues., July 13, 8:00 – 9:00 AM

Ballroom Section B

ON UTILIZING DEPENDENCE-TREE MODELING IN ARBITRARY SIMULATIONS

**B. John Oommen, Chancellor's Professor
Fellow of IEEE and IAPR, School of Computer Science
Carleton University, Canada**

The art and science of simulation involves modeling the various possible events that could occur using *random* vectors. Further, in every study involving random vectors, the question of determining the dependence between the variables (in these vectors) is fundamental to the simulation and to the associated data processing techniques. In the simplest model, the variables can be viewed from a simplistic perspective, and assumed to be independent. At the other extreme of the spectrum, one can assume that every variable is dependent on every other variable. The situation then becomes both extremely complex and intractable unless one resorts to Markovian-like assumptions. In this paper, we shall show how one can model the dependence using a linear number of dependencies implying the so-called *Dependence Tree*. We shall discuss the various scenarios encountered when the metrics for measuring the quality of the approximation is entropy-based or *Chi-square* based. In each case, we shall show how one can simulate events based on such a random vector, and also how the parameters associated with this random vector can be learned. Experimental results demonstrating the power of this modeling strategy will also be included in the paper.

Dr. John Oommen was born in Coonoor, India on September 9, 1953. He obtained his B.Tech. degree from the Indian Institute of Technology, Madras, India in 1975. He obtained his M.E. from the Indian Institute of Science in Bangalore, India in 1977. He then went on for his M.S. and Ph. D. which he obtained from Purdue University, in West Lafayette, Indiana in 1979 and 1982 respectively. He joined the School of Computer Science at Carleton University in Ottawa, Canada, in the 1981-82 academic year. He is still at Carleton and holds the rank of a Full Professor. Since July 2006, he has been

awarded the honorary rank of *Chancellor's Professor*, which is a lifetime award from Carleton University. His research interests include Automata Learning, Adaptive Data Structures, Statistical and Syntactic Pattern Recognition, Stochastic Algorithms and Partitioning Algorithms. He is the author of more than 330 refereed book chapters, journal and conference publications, and is a *Fellow of the IEEE* and a *Fellow of the IAPR*. Dr. Oommen has also served on the Editorial Board of the *IEEE Transactions on Systems, Man and Cybernetics*, and *Pattern Recognition*.

KEYNOTE SPEAKER 3



Wed., July 14, 8:00 – 9:00 AM

Ballroom Section B

**BUT WHAT IF IT GETS WORSE?
REALLY GRAND CHALLENGES FOR MODELING AND SIMULATION IN A RISKY
AND COMPLEX WORLD**

Priscilla Elfrey, Kennedy Space Center, NASA

The headlines scream about one disaster after another where few seem to have given adequate thought or effort to unanticipated consequences. Whether finance, evil intent or natural events—modeling and simulation can and should play a part in innovative and effective solutions. It is not enough to have a good plan or even adequate execution. We need to ask hard questions and apply extraordinary skills to our decision making and action. As a community, we need to create opportunities to apply our imagination, technology, rigorous effort and, systematic attention to risk whether long-term or immediate. Apollo 13, 9/11, the financial crisis, the oil spill in the Gulf of Mexico and tomorrow's headlines remind us of the need for uncommon common sense as do our everyday opportunities to change the world.

Priscilla Elfrey chairs the GC/MS:ICCRE. At the Kennedy Space Center, she supports simulation for space exploration, especially lifecycle innovation, outreach, international research opportunities and work to establish the Human-Centered Design and Learning Institute. She is leading the NASA STEM PLACE at I/ITSEC and represents KSC on SimSummit. She managed training at NYU and Yale, was a founder of 2 off-off Broadway theaters, founder and project manager of what is now the National Center for Simulation, produced award winning videos for NASA and wrote *The Hidden Agenda* published by John Wiley and numerous conference papers and articles on technology, careers, storytelling and the arts. Educated in NYC (Barnard, Columbia, Moreno Institute and Cornell) and the first woman Associate Dean of Yale College and former Fellow of Calhoun College- and Florida Atlantic University Center for Electronic Communication, she is SCS liaison on the SISO Conference Committee, director of Liophant and a Fellow of the MISS, Savona, Italy

EXHIBITORS



ForwardSim Inc. a leader in simulation implementation develops the HLA Toolbox™ for MATLAB and the HLA Blockset for Simulink. These High Level Architecture products provide graphical user interfaces, code generation, error handling, data encoding /decoding, FOM agile capability along with detailed federation samples and a lot of features designed to facilitate the implementation of distributed simulations compatible with HLA 1.3, IEEE 1516 and IEEE 1516 Evolved simulation standards. Reusability of existing MATLAB models, interoperability with any HLA compliant federation or tools (RTI's), on top of all the development capabilities of MATLAB and Simulink are just a few benefits of using the HLA Toolbox™ to build your federations.

Visit www.forwardsim.com for more details.

Siemens PLM Software

SIEMENS

Siemens PLM Software, a business unit of the Siemens Industry Automation Division, is a leading global provider of product lifecycle management (PLM) software and services with nearly 6.7 million licensed seats and 63,000 customers worldwide. Headquartered in Plano, Texas, Siemens PLM Software works collaboratively with companies to deliver open solutions that help them turn more ideas into successful products. For more information on Siemens PLM Software products and services, visit www.siemens.com/plm

UDMTEK

UDMTEK was established in 2007 from UDM (unified digital manufacturing) laboratory at the division of industrial & information systems engineering, Ajou university. The company focused on research & development of next generation simulation areas. PLC Studio ® was developed for validating a control program of machine or manufacturing systems under virtual environment. It showed excellence in changing U.S. Alabama shuttle & AS/RS line of Hyundai motor company in 2008. At that time, U.S. Alabama factory was built by foreign engineer, which all control logics were developed by German engineers. According to change of production line, it was really difficult to change all control programs, which were developed by others. Using virtual factory, established by PLC Studio ® , Hyundai control engineers could start to test all control

programs at design phase, improve them, make them robust, and also commission all machines virtually prior to real operation.

Starting from 2008, PLC Studio ® had been applied for virtual commissioning under abnormal conditions of semiconductor & LCD machines. Without using a real machine or manufacturing line, virtual commissioning could reduce cost and risk since expensive materials and energy could be consumed by real operation test. One of important issues is to validate a control logics under possible abnormal conditions, which might be dangerous or very expensive to prepare an abnormal test environment and to commission it.

Currently using **PLC Studio** ® , **UDMTEK** tries to develop an efficient training, monitoring, maintenance operation test, and marketing tool by allowing peoples to provide a necessary domain knowledge of a machine or manufacturing systems such as operation control of semiconductor/LCD machine, steel equipment line, chemical equipment systems, automotive line, nuclear plant, and all other PLC controlled systems.



The Society for Modeling & Simulation International (SCS) was established in 1952 as a nonprofit, volunteer-driven corporation called Simulation Councils, Inc. Simulation Councils, Inc. became The Society for Computer Simulation which is where we derived the acronym SCS. Today, we still keep the familiar SCS acronym as a part of our identity, but have given it a new and more relevant meaning: Simulate, Create, Serve. This SCS is not only who we are, but also who we serve.

SCS is the only technical Society dedicated to advancing the use of modeling & simulation to solve real-world problems. SCS is the principal technical society devoted to the advancement of simulation and allied computer arts in all fields. The purpose of SCS is to facilitate communication among professionals in the field of simulation. To this end, SCS organizes meetings, sponsors and co-sponsors national and international conferences, and publishes the *SIMULATION: Transactions of The Society for Modeling and Simulation International* and the *Journal of Defense Modeling and Simulation* magazines.

SPECTS 2010 Program

Co-sponsored by IEEE Communication Society

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Mohammad Obaidat, Monmouth University, NJ, USA

General Chair

Jose L. Marzo
Univ. of Girona, Spain

Program Chairs

Jose Sevillano, Univ. of Seville, Spain
Raffaele Bolla, Univ. of Genoa, Italy

Organizing Committee

Daniel Cascado, Univ. of Seville, Spain
Mieso Denko, Univ. of Guelph, Canada
Essia Hamouda, Univ. of California, Riverside, USA
Joel Rodrigues, Univ. of Beira Interior, Portugal
Alejandro L. Barranco, Univ. of Seville, Spain
Franco Davoli, Univ. of Genoa, Italy

Sunday, July 11, 2010

TUTORIAL

13:30-15:00

Room York

[Advanced Statistical Approaches for Network Anomaly Detection](#)

Instructor: Prof. Christian CALLEGARI, University of Pisa, Italy

13:30 – 17:00

Room: Chaudiere

[Computer Assisted Exercises and Simulation](#)

Presented by: Dr. Erdal Cayirci

Monday, July 12, 2010

OPENING SESSION AND KEYNOTE SPEAKER

8:30-10:00

SPECTS 2010/SummerSim 2010 keynote

Room: Ballroom Section B

Keynote Speaker: Azzedine Boukerche (SITE, University of Ottawa)

DISTRIBUTED SIMULATION SYSTEM - A NECESSARY PUBLIC SECURITY AND SAFETY TESTBED FOR AN URBAN EMERGENCY PREPAREDNESS CLASS OF APPLICATIONS.

10:00 – 10:30 Break

Room Ballroom Section A (Exhibit Area)

Track 1

SESSION 1: MOBILITY

ROOM: BALLROOM B

10:30-12:00

Session Chair: Prof. Raffaele Bolla, University of Genoa, Italy.

PERFORMANCE MODELING OF PRE-AUTHENTICATION AND HANDOFF MECHANISMS IN IEEE 802.11 BASED VEHICULAR NETWORKS

Sireesha Madabhushi, Dharmaraja Selvamuthu and Subrat Kar

SCALABILITY OF PRIORITIZED MULTIPLE REGIONS OF INTEREST FOR P2P MOBILE DEVICES

Raja Kushalnagar and Jehan-Francois Paris

PERFORMANCE EVALUATION OF A DHT-BASED INTEGRATED MOBILITY ARCHITECTURE

Raffaele Bolla, Andrea Ranieri and Matteo Repetto

TRADE-OFF EVALUATION BETWEEN FAIRNESS AND THROUGHPUT FOR TCP CONGESTION CONTROL MECHANISMS IN A WIRELESS LAN ENVIRONMENT

Masafumi Hashimoto, Go Hasegawa and Masayuki Murata

12:00 – 13:30 LUNCH

SESSION 2: QUALITY OF SERVICES

ROOM: BALLROOM B

13:30-15:00

Session Chair: Prof. Ramón Puigjaner, Universitat de les Illes Balears, Spain.

ENHANCING QOS OF NON-REAL -TIME APPLICATIONS IN WIRELESS NETWORK THROUGH FIXED BACKOFF STAGE

Mohamad Abou El-Nasr, Mohamed Khedr and Radwa A. Osman

A NOVEL PASSIVE BANDWIDTH RESERVATION ALGORITHM BASED ON NEURAL NETWORKS PATH PREDICTION IN WIRELESS ENVIRONMENTS

Peppino Fazio and Floriano De Rango

QUALITY OF MODELLING VS QUALITY OF RESULTS: CASE STUDY OF WIRELESS NETWORK PERFORMANCE

María Elena García and Ramon Puigjaner

CAPACITY PLANNING OF NETWORK REDESIGN – A CASE STUDY

Tahani Hussain and Sami Habib

15:00 – 15:30 Break Room Ballroom Section A (Exhibit Area)

SESSION 3: MEASURE BASED AND CLASSIFICATION MECHANISMS

ROOM: BALLROOM B

15:30-17:30

Session Chair: Dr. Andreas Johnsson, Ericsson Research, Sweden.

NETWORK TOMOGRAPHY BY NON NEGATIVE MATRIX FACTORIZATION (NNMF)

Muhammad Raza, Bill Robertson, William Phillips and Jacek Ilow

A SELF-ORGANIZING SCALABLE NETWORK TOMOGRAPHY CONTROL PROTOCOL FOR ACTIVE MEASUREMENT METHODS

Rezaul Hoque, Andreas Johnsson, Christofer Flinta, Svante Ekelin and Mats Björkman

TRACKING PER-FLOW STATE – BINNED DURATION FLOW TRACKING

Brad Whitehead, Chung-Horng Lung and Peter Rabinovitch

PCIU: AN EFFICIENT PACKET CLASSIFICATION ALGORITHM WITH AN INCREMENTAL UPDATE CAPABILITY

Omar Ahmed, Shawki Areibi and Dalia Fayek

GREENSIM: AN OPEN SOURCE TOOL FOR EVALUATING THE ENERGY SAVINGS THROUGH RESOURCE DYNAMIC ADAPTATION

Raffaele Bolla, Roberto Bruschi and Alessandro Carrega

Track 2

SESSION 4: CLUSTERS, GRIDS AND DISTRIBUTED SYSTEMS

ROOM: BALLROOM C

10:30-12:00

Session Chair: Dr. Sami Habib, Kuwait University, Kuwait

HANDLING SINGLE NODE FAILURES USING AGENTS IN COMPUTER CLUSTERS

Blesson Varghese, Gerard McKee and Vassil Alexandrov

MATCHMAKING WITH LIMITED KNOWLEDGE OF RESOURCES ON CLOUDS AND GRIDS

Jose Melendez and Shikharesh Majumdar

PERFORMANCE ANALYSIS OF DISTRIBUTED SOFTWARE SYSTEMS: A MODEL-DRIVEN APPROACH

Issa Traore, Isaac Woungang, Ahmed Awad El Sayed Ahmed and Mohammad S. Obaidat

UML-BASED PERFORMANCE MODELING OF DISTRIBUTED SOFTWARE SYSTEMS

Issa Traore, Isaac Woungang, Ahmed Awad El Sayed Ahmed and Mohammad S. Obaidat

SESSION 5: PROCESSORS AND I/O SYSTEMS

ROOM: BALLROOM C

13:30-15:00

Session Chair: Prof. Alejandro Linares-Barranco. University of Sevilla, Spain

GRAPHICS PERFORMANCE ANALYSIS USING AMDAHL'S LAW REGRESSION METHOD

Joseph Issa and Silvia Figueira

I/O CHARACTERIZATION ON A PARALLEL FILE SYSTEM

Sumit Narayan and John A. Chandy

FRAMES-TO-AER EFFICIENCY STUDY BASED ON CPUS PERFORMANCE COUNTERS

Manuel J. Dominguez-Morales, Alejandro Linares-Barranco, Fernando Diaz-del-Rio, Pablo Inigo-Blasco,

Juan L. Font-Calvo, Daniel Cascado-Caballero, Gabriel Jimenez-Moreno and Jose L. Sevillano-Ramos

QUANTITATIVE STUDY OF SOLID STATE DISKS FOR MASS STORAGE

Soraya Zertal and Wilfried Dron

15:00 – 15:30 Break

Ballroom Section A (Exhibit Area)

SESSION 6: SECURITY

ROOM: BALLROOM C

15:30-17:00

Session Chair: Dr S Dharmaraja, IIT Delhi, India.

A NOVEL MULTI TIME-SCALES PCA-BASED ANOMALY DETECTION SYSTEM

Christian Callegari, Loris Gazzarrini, Stefano Giordano, Michele Pagano and Teresa Pepe

SECURITY MECHANISM FOR IMS AUTHENTICATION USING PUBLIC KEY TECHNIQUES

Viviana Rodriguez, Yezid Donoso and Miguel Navarro

TIMING-ACCURATE TPM SIMULATION FOR WHAT-IF EXPLORATIONS IN TRUSTED COMPUTING

Vandana Gunupudi and Stephen Tate

PERFORMANCE EVALUATION OF TPM-BASED DIGITAL WALLETS

Stephen Tate and Roopa Vishwanathan

Tuesday, July 13, 2010

KEYNOTE SPEAKER SESSION

8:00-9:00

SPECTS 2010/SummerSim 2010 keynote

Room: Ballroom Section B

Keynote Speaker: John Oommen, (SCS, Carleton University)

ON UTILIZING DEPENDENCE-TREE MODELING IN ARBITRARY SIMULATIONS

10:00 – 10:30 Break

Ballroom Section A (Exhibit Area)

Track 1

SESSION 7: MULTIMEDIA

ROOM: BALLROOM B

10:30-12:00

Session Chair: Stephan Heckmüller, University of Hamburg, Germany.

SIMULATION OF IPTV CACHING STRATEGIES

Henrik Abrahamsson and Mats Björkman

THE INTERMEDIA NETWORKING AND SECURITY ARCHITECTURE FOR USER CENTRIC MULTIMEDIA CONVERGENCE

Matteo Repetto, Riccardo Rapuzzi, Stefano Chessa, Stefano Lenzi, John Gialelis and Tasos Fragopoulos

ANALYTICAL LOAD TRANSFORMATIONS OF VIDEO STREAMS: VALIDATION USING MEASURED TRAFFIC

Stephan Heckmüller and Bernd E. Wolfinger

USER-CENTRIC MOBILITY FOR MULTIMEDIA COMMUNICATIONS: EXPERIENCE AND USER EVALUATION FROM A LIVE DEMO

Raffaele Bolla, Riccardo Rapuzzi and Matteo Repetto

12:00 – 13:30 LUNCH

SESSION 8: TCP

ROOM: BALLROOM B

13:30-15:00

Session Chair: Dr Christian Callegari, University of Pisa, Italy

BEHAVIOR ANALYSIS OF TCP LINUX VARIANTS

Christian Callegari, Stefano Giordano, Michele Pagano and Teresa Pepe

EFFECTIVENESS AND FAIRNESS TRADEOFF FOR TCP USING CROSS-LAYER DESIGN IN UMTS SYSTEM

Qian Wang and Dongfeng Yuan

AN IMPROVED TCP CONGESTION CONTROL MECHANISM WITH ADAPTIVE CONGESTION WINDOW

Gian Wang and Dongfeng Yuan

15:00 – 15:30 Break

Ballroom Section A (Exhibit Area)

SESSION 9: CORE/TRANSPORT NETWORKS

ROOM: BALLROOM B

15:30-17:30

Session Chair: Prof. Raffaele Bolla, University of Genoa, Italy.

PROTECTING A MPLS MULTICAST SESSION TREE WITH BOUNDED SWITCHOVER TIME

Guomin Wei, Chung-Horng Lung and Anand Srinivasan

MODELLING SPREADING OF FAILURES IN GMPLS-BASED NETWORKS

Marc Manzano, Juan Segovia, Eusebi Calle, Pere Vila and Jose L. Marzo

A COOPERATIVE MIDDLEWARE FOR DISTRIBUTED SW ROUTERS

Raffaele Bolla, Roberto Bruschi, Luca Carbone and Guerino Lamanna

A HEURISTIC ANALYSIS OF RESILIENCE TO MULTIPLE FAILURES IN GMPLS NETWORKS

Juan Segovia, Eusebi Calle, Pere Vila and Jose L. Marzo

NETPLACE: EFFICIENT RUNTIME MINIMIZATION OF NETWORK EMULATION EXPERIMENTS

Andreas Grau, Klaus Herrmann and Kurt Rothermel

Track 2

SESSION 10: WIRELESS NETWORKS

ROOM: BALLROOM C

10:30-12:00

Session Chair: Dr. Floriano de Rango, University of Calabria, Italy.

A ENERGY EVALUATIONS OF E-TDMA VS IEEE 802.11 IN WIRELESS AD HOC NETWORKS

Floriano De Rango and Annalisa Perrotta

FRIEND-BASED SECURE ROUTING THROUGH CHALLENGES IN MOBILE AD HOC NETWORKS

Sanjay Kumar and Mohammad Obaidat

EVALUATION OF A POWER-SAVING METHOD FOR REAL-TIME WIRELESS SENSOR NETWORKS

Daniel Cascado, Jose Luis Sevillano, Angel Jimenez, Anton Civit, Pablo Inigo and Juan Luis Font

INTERFERENCE-AWARE DYNAMIC CHANNEL ALLOCATION SCHEME FOR CELLULAR NETWORKS

Daniela Martinez, Angel G. Andrade and Anabel Martinez

12:00 – 13:30 LUNCH

SESSION 11: COMPUTER APPLICATIONS

ROOM: BALLROOM C

13:30-15:00

Session Chair: Prof. José L. Sevillano, University of Sevilla, Spain

PERFORMANCE EXTRAPOLATION THAT USES INDUSTRY BENCHMARKS WITH PERFORMANCE MODELS

Nidhi Tiwari and Kiran Nair

A RSS-BASED FINGERPRINTING METHOD FOR POSITIONING BASED ON HISTORICAL DATA

Shahrzad Khodayari, Mina Meleki and Elham Hamedi

WHAT'S INSIDE MYSPACE COMMENTS?

Luisa Massari

15:00 – 15:30 Break Ballroom Section A (Exhibit Area)

SESSION 12: SCHEDULING AND REAL TIME SYSTEMS

ROOM: BALLROOM C

15:30-17:00

Session Chair: Prof. Helen Karatza, Aristotle University, Greece

**UML MODEL-DRIVEN DETECTION OF PERFORMANCE BOTTLENECKS IN
CONCURRENT REAL-TIME SOFTWARE**

Vahid Garousi

**OPTIMIZATION OF THE DESIGN OF DIGITAL FILTERS USING EVOLUTIONARY
ALGORITHMS**

*Gustavo Jimenez, Yezid Donoso, Daniel Barragan, Andrea Ortiz and Dustin
Pinedo*

GANG SCHEDULING WITH PRECEDENCE CONSTRAINTS

Zafeirios Papazachos and Helen Karatza

**THE METHOD OF STAGES SIMULATOR (MOSS) FOR MODELING VARIANCE IN
SOFT REAL-TIME SYSTEMS**

Nathan Hamm and Larry Dowdy

Tutorial: The Simio Object Paradigm (beyond ARENA)

Room: Seigniory

15:30 – 6:00 PM

*Presented by: - Emeritus Professor Ralph C. Huntsinger, Ph.D.
California State University, Chico-Humboldt USA*

18:30 –

SummerSim'10/SISO Banquet: Pre-Paid River Boat Dinner

Wednesday, July 14, 2010

KEYNOTE SPEAKER SESSION

8:00-9:00 AM

SPECTS 2010/SummerSim 2010 keynote Speaker

Room: Ballroom Section B

Keynote Speaker: Priscilla Elfrey, NASA.

**BUT WHAT IF IT GETS WORSE? REALLY GRAND CHALLENGES FOR MODELING
AND SIMULATION IN A RISKY AND COMPLEX WORLD**

10:00 – 10:30 Break

Ballroom Section A (Exhibit Area)

Track 1

SESSION 13: PHYSICAL LAYER

ROOM: BALLROOM B

10:30-12:00

Session Chair: Prof. Monia Najjar, IST, Tunisia.

OPTIMIZATION OF SYMBOL MAPPING FOR BIT-INTRELEAVED CODED MODULATION WITH ITERATIVE DECODING

Jianping Li and Weiwei Fang

SPACECRAFT MULTIPLE ARRAY COMMUNICATION SYSTEM PERFORMANCE ANALYSIS

Shian Hwu

IMPLEMENTATION OF SAMPLING-BASED TURBO DECODER FOR NONCOHERENT BFSK UNDER GAUSSIAN NOISE

Junghwan Kim, Mike Orra, Pooja Raorane and Chong Wang

INCORPORATING PHYSICAL-LAYER EFFECTS IN MODELING OF MAC PROTOCOLS OPERATING IN MANETS

Hui Xu, J.J. Garcia-Luna-Aceves and Hamid R. Sadjadpour

12:00 – 13:30 LUNCH

SESSION 14: VoIP

ROOM: BALLROOM B

13:30-15:00

Session Chair: Prof. Daniele Tessera. Università Cattolica del Sacro Cuore, Brescia, Italy

NEW SPEECH TRAFFIC BACKGROUND SIMULATION MODELS FOR REALISTIC VOIP NETWORK PLANNING

Abdel Rabassa, Marc St-Hilaire, Chung-Horng Lung, Ioannis Lambadaris, Nishith Goel and Marzia Zaman

DELAY AND CAPACITY ANALYSIS OF STRUCTURED P2P OVERLAY FOR IP TELEPHONY

Jagadish Ghimire, Mehdi Mani, Noel Crespi and Teerapat Sanguankotchakorn

A NON-INTRUSIVE METHOD TO ASSESS VOICE QUALITY OVER INTERNET

Kapilan Radhakrishnan, Hadi Larijani and Tom Buggy

STABILITY CONDITION FOR SIP RETRANSMISSION MECHANISM: ANALYSIS AND PERFORMANCE EVALUATION

Yang Hong, Changcheng Huang and James Yan

15:00 – 15:30 Break Ballroom Section A (Exhibit Area)

SESSION 15: WORK IN PROGRESS

ROOM: BALLROOM B

15:30-17:30

Session Chair: Dr. Álvaro Marco, University of Zaragoza, Spain

LIGHTPATH SURVIVABILITY WITH QOT GUARANTEES: DEVELOPING AND EVALUATING A NEW ALGORITHM

Davide Adami, Stefano Giordano, Michele Pagano and Luiz Gustavo Zuliani

AN EXPLORATORY ANALYSIS OF THE NOVELTY OF A NEWS WEB SITE

Maria Carla Calzarossa and Daniele Tessera

ADAPTIVE MODULATION AND CODING FOR WIMAX SYSTEMS WITH VAGUE CHANNEL STATE INFORMATION USING COGNITIVE RADIO

Mohamd Khedr

ITERATIVE BIT-FLIPPED DECODING OF CONCATENATED REED SOLOMON/CONVOLUTIONAL CODES WITH HMAC

Obaidur Rehman and Natasa Zivic

NETWORK CALCULUS BASED MODELING OF ANOMALY DETECTION

Muhammad Raza

TOWARDS MORE REALISTIC SIMULATIONS OF AD-HOC NETWORKS - CHALLENGES AND OPPORTUNITIES

Steffen Moser and Frank Slomka

MODELING CONTENT HOTNESS DYNAMICS IN NETWORKS

Jagadish Ghimire and Mehdi Mani

**18:30 –
OPTIONAL DINNER AT LOCAL RESTAURANTS**

SCSC 2010 Program

Co-sponsored by ACM

General Chair

Gabriel Wainer, Carleton University, Canada

Program Chairs

Mhamed Itmi , INSA Rouen, France
Peter Kropf, Université de Neuchâtel, Switzerland
Andreas Tolk, Old Dominion University, USA

Steering Committee

Agostino Bruzzone, MISS DIPTM University of Genoa, Italy
Mhamed Itmi , INSA Rouen, France
Hamid Vakilzadian, University of Nebraska, Lincoln, USA
Gabriel Wainer, SCE, Carleton University, Canada

Sunday, July 11, 2010

TUTORIAL

13:30-15:00

Room York

ADVANCED STATISTICAL APPROACHES FOR NETWORK ANOMALY DETECTION

Instructor: Prof. Christian CALLEGARI, University of Pisa, Italy

13:30 – 17:00

Room: Chaudiere

COMPUTER ASSISTED EXERCISES AND SIMULATION

Presented by: Dr. Erdal Cayirci

Monday, July 12, 2010

OPENING SESSION AND KEYNOTE SPEAKER

8:30-10:00

SCSC 2010/SummerSim 2010 keynote

Room: Ballroom Section B

Keynote Speaker: Azzedine Boukerche (SITE, University of Ottawa)

DISTRIBUTED SIMULATION SYSTEM - A NECESSARY PUBLIC SECURITY AND SAFETY TESTBED FOR AN URBAN EMERGENCY PREPAREDNESS CLASS OF APPLICATIONS.

10:00 – 10:30 Break

Ballroom Section A (Exhibit Area)

Track: Agent-Directed Simulation –Chairs: Tuncer Ören and Levent Yilmaz

Session ADS1: Applications

Room: Richelieu

10:30 – 12:00

Session Chair: Tuncer Ören

AN AGENT-BASED MODEL OF THE ANOPHELES GAMBIAE MOSQUITO LIFE CYCLE

Ying Zhou, S. M. Niaz Arifin, James Gentile, Steven Kurtz, Gregory Davis, Barbara Wendelberger and Greg Madey

TOWARDS A DELIBERATIVE AGENT SYSTEM BASED ON DEVS FORMALISM FOR APPLICATION IN AGRICULTURE

Mahuna Akplogan, Gauthier Quesnel, Frédérick Garcia, Alexandre Joannon and Roger Martin-Clouaire

MODELING WITH NON-COOPERATIVE AGENTS: DESTRUCTIVE SEARCH FOR RANDOMLY LOCATED OBJECTS

Dragos Calitoiu and Dan Milici

12:00 – 13:30 LUNCH

Session ADS2: Analysis and Methodology

Room: Richelieu

13:30 – 15:00

Session Chair: Tuncer Ören

P-SAM: A POST-SIMULATION ANALYSIS MODULE FOR AGENT-BASED MODELS

S. M. Niaz Arifin, Ryan C. Kennedy, Kelly E. Lane, Gregory R. Madey, Agustin Fuentes and Hope Hollocher

ENHANCED NETWORK MODELING IN ABSNEC

Richard McCourt and Kevin Ng

VERIFICATION & VALIDATION BY DOCKING: A CASE STUDY OF AGENT-BASED MODELS OF ANOPHELES GAMBIAE

S. M. Niaz Arifin, Gregory J. Davis, Ying Zhou and Gregory R. Madey

15:00 – 15:30 Break Ballroom Section A (Exhibit Area)

Session DS3: Executable Architectures

Room: Richelieu

15:30 – 17:00

Session Chair: Andreas Tolk

EXECUTABLE ARCHITECTURES

Edwin Shuman

ADDING EXECUTABLE CONTEXT TO EXECUTABLE ARCHITECTURES: SHIFTING TOWARDS A KNOWLEDGE-BASED VALIDATION PARADIGM FOR SYSTEM-OF-SYSTEMS ARCHITECTURES

Johnny Garcia and Andreas Tolk

Track: Business, Management, Planning & Logistics –Chair: Agostino Bruzzone

10:00 – 10:30 Break Ballroom Section A (Exhibit Area)

Session BIS1: Industry Applications

Room: Frontenac

10:30 – 12:00

Session Chair: Agostino Bruzzone

SIMULATION ANALYZES DEADLOCK CONCERNS IN AUTOMOTIVE MANUFACTURE

Dominic Baffo, Edward Williams and Onur Ülgen

A SIMULATION APPROACH TO AIRLINE MAINTENANCE MANPOWER PLANNING

Massoud Bazargan

MULTIOBJECTIVE EVOLUTIONARY OPTIMIZATION OF A TRANSPORTATION FLEET WITH A NEW MONETARY COST FUNCTION

Slawomir Wesolkowski, Ziad Sakr, Bruno Di Stefano and Anna Lawniczak

Session BIS2: Hybrid and Emerging Methods

Room: Frontenac

13:30 – 15:00

Session Chair: Rubén Fuentes-Fernández

A VARIABLE NEIGHBOURHOOD SEARCH COMBINING CONSTRAINT PROGRAMMING AND LAGRANGEAN RELAXATION FOR SOLVING ROUTING PROBLEMS

Rosa Herrero, Daniel Guimarans, Juan José Ramos and Silvia Padrón

HYBRID SEARCH ALGORITHM TO OPTIMIZE SCHEDULING PROBLEMS FOR TCPN MODELS

Miguel Antonio Mujica and Miquel Angel Piera

SIMULATION OF VERTICAL HANDOVER ALGORITHMS WITH NCTUNS

Alexander García, Lina Escobar, Andres Navarro, Adriana Arteaga, Fabio Guerrero and Carlos Salazar

15:00 – 15:30 Break

Ballroom Section A (Exhibit Area)

Session BIS3: Planning Support

Room: Frontenac

15:30 – 17:00

Session Chair: John Richardson

A NEW DYNAMIC CELL FORMATION MODEL BY CONSIDERING MACHINE SEQUENCE AND LABOR-INTENSIVE SITUATION

Ali Azadeh, Mohammad Sheikhalishahi and Mohammad Zamanipour

SIMULATION AND OPTIMIZATION OF THE PRE-HOSPITAL CARE SYSTEM OF THE NATIONAL UNIVERSITY OF MEXICO USING TRAVELLING SALESMAN PROBLEM ALGORITHMS

Esther Segura, Luis Altamirano and Idalia Flores

A MODELING METHODOLOGY FOR PROCESS CONTROL IN THE AUTOMATED MANUFACTURING SYSTEM

Hyeong-tae Park, Jong-Geun Kwak, Gi-Nam Wang and Sang-chul Park

Track: Simulation in Healthcare and Bioinformatics –Chair: Isaac Barjis

Session BIO1: Biological Systems Simulation

Room: Joliet

10:30 – 12:00

Session Chair: Jonathan Caux.

APPLYING THE TPS METHOD TO MODELING AND SIMULATION OF BIOLOGICAL SYSTEMS

Rhys Goldstein, Nada Farran, Hamel Yigang, Sanaa Lissari and Gabriel Wainer

HASH LIFE ALGORITHM ON 3D EXCITABLE MEDIUM APPLICATION TO INTEGRATIVE BIOLOGY

Jonathan Caux, David Hill and Pridi Siregar

MODELING OF P53 SIGNALING PATHWAY REGULATION

Isaac Barjis, Khalid Samarrai and Ruwaa Samarrai

12:00 – 13:30 LUNCH

Session BIO2: Healthcare Simulation and Healthcare Education Simulation

Room: Joliet

13:30 – 15:00

Session Chair: Walied Samarrai

SCHNAPS: A GENERIC POPULATION-BASED SIMULATOR FOR PUBLIC HEALTH PURPOSES

Audrey Durand, Christian Gagné, Marc-André Gardner, François Rousseau, Yves Giguère and Daniel Reinharz

INVESTIGATING IMMUNE SYSTEM AGING: SYSTEM DYNAMICS AND AGENT BASED MODELLING

Grazziela Figueredo and Uwe Aickelin

MODELING AND SIMULATION OF CELLULAR TRANSPORT MECHANISM AS A GAME

Isaac Barjis, David Smith and Walied Samarrai

15:00 – 15:30 Break

Ballroom Section A (Exhibit Area)

Track: Work in Progress –Chairs: Mhamed Itmi and Andreas Tolk

WIP-Session 1

Room: Joliet

15:30 – 17:30

Session Chair: Zhanyang Zhang

MODELING AND SIMULATION EDUCATION FOR THE MEDICAL AND HEALTH SCIENCES

John Sokolowski and Catherine Banks

STAY AT HOME, WASH YOUR HANDS: EPIDEMIC DYNAMICS WITH AWARENESS OF INFECTION

Adam Kleczkowski and Savi Maharaj

DEVS-BASED MODELING OF A HUMAN MOTION DATA SYNTHESIS SYSTEM

Seyed Ali Etemad and Gabriel A. Wainer

A SCALABLE DATA DISTRIBUTION MANAGEMENT APPROACH

Shih-Hsiang Lo and Yeh-Ching Chung

Tuesday, July 13, 2010

KEYNOTE SPEAKER

8:00-9:00

SCSC 2010/SummerSim 2010 keynote

Room: Ballroom Section B

Keynote Speaker: John Oommen, (SCS, Carleton University)

ON UTILIZING DEPENDENCE-TREE MODELING IN ARBITRARY SIMULATIONS

M&S BODY OF KNOWLEDGE

Tuesday, July 13, 1:30 – 3:00 PM

Room Seignior

Panel organizers: Bill Waite, Chairman and CTO, The AEGIS Technologies Group, and Tuncer Ören, Emeritus Professor, Founding Director of M&SNet of SCS

Panel Members: David Gross, Lockheed Martin
Andreas Tolk, Old Dominion University
William Tucker, Boeing
John Williams, NTSA

Track: Simulation for Defense & Security – Chair: Andreas Tolk

Session DS1: Logistics and Personnel

Room: Richelieu

10:30 – 12:00

Session Chair: Johnny Garcia

MODELING AND ANALYSIS OF CANADIAN FORCES RSOM HUBS FOR NORTHERN OPERATIONS

Ahmed Ghanmi

MODELING AND SIMULATION OF AIRSHIP LOGISTICS HEAVY LIFT FOR MILITARY APPLICATIONS

Abderrahmane Sokri and Ahmed Ghanmi

THE ARENA CAREER MODELING ENVIRONMENT - A NEW WORKFORCE MODELING TOOL FOR THE CANADIAN FORCES

Antony Zegers and Stan Isbrandt

12:00 – 13:30 LUNCH

Session DS2: Tactical Application Support

Room: Richelieu

13:30 – 15:00

Session Chair: Edwin Shuman

TACTICAL VEHICLE FLEET MIX OPTIMIZATION

Ahmed Ghanmi, Leanne Stuive and Slawomir Wesolkowski

DEVS BASED UNDERWATER WARFARE SIMULATION DEVELOPMENT FOR EFFECTIVENESS ANALYSIS

Kyung Min Seo, Jeong Hee Hong and Tag Gon Kim

COUAV: A MULTI-UAV COOPERATIVE SEARCH PATH PLANNING SIMULATION ENVIRONMENT

Jens Happe and Jean Berger

15:00 – 15:30 Break

Ballroom Section A (Exhibit Area)

Track: Work in Progress – Chairs: Mhamed Itmi and Andreas Tolk

WIP-Session 2

Room: Richelieu

15:30 – 17:00

Session Chair: Steffen Strassburger

THE ROLE OF MSIAC IN SUPPORTING MODELING AND SIMULATION

Jerry Feinberg, Kriya Kaping and Robert Graebener

VIRTUAL INTELLIGENCE, SURVEILLANCE AND RECONNAISSANCE EVALUATION ENVIRONMENT

Rahim Jassemi-Zargani, Wayne Robbins, Chris Helleur, Sean Bourdon, Nathan Kashyap and David Campbell

SIMULATING WINDOWS-BASED CYBER ATTACKS USING LIVE VIRTUAL MACHINE INTROSPECTION

Dustyn A. Dodge, Barry E. Mullins, Gilbert L. Peterson and James S. Okolica

THE LOGISTICS PROCESS ANALYSIS TOOL: COMBINING AGENT-BASED AND DISCRETE EVENT SIMULATION FOR IMPROVED LOGISTICS ANALYSIS

Charles Van Groningen, Mary Duffy Braun, Brian Craig, Kathy Lee Simunich and Charles Olson

Track: Computer Graphics for Simulation – Chair: John Richardson

10:00 – 10:30 Break Ballroom Section A (Exhibit Area)

Session CG1: Web3D and Distributed Simulation API's for CG in Simulation

Room: Frontenac

10:30 – 12:00

Session Chair: John Richardson

ANALYSIS OF X3D SCENE, WEB X3D OBJECTS AND MEDIA PANORAMAS

Jussara Kofuji, Sergio Kofuji and Marcelo Zuffo

VERBAL CONTROL OF MATHEMATICAL TOOLS FOR SIMULATION AND VIRTUAL ENVIRONMENTS

John Richardson

INSIGHT3D: A HIGH PERFORMANCE TOOLKIT FOR ADVANCED VISUALIZATION OF SPACE AND TERRESTRIAL ENVIRONMENTS

Graham Beasley

12:00 – 13:30 LUNCH

Session CG2: Parallel, Semantic and CA techniques for CG in Simulation

Room: Frontenac

13:30 – 15:00

Session Chair: John Richardson

N-BODY PARALLEL MODEL OF TUMOR PROLIFERATION

Rafal Wcislo, Pawel Gosztyla and Witold Dzwinel

CFD MODELLING AS AN INTEGRATED PART OF MULTI-LEVEL SIMULATION OF PROCESS PLANTS – SEMANTIC MODELLING APPROACH

Marek Gayer, Juha Kortelainen and Tommi Karhela

DYNAMIC CLOUD SIMULATION USING CELLULAR AUTOMATA AND TEXTURE SPLATTING

Eric Upchurch and Sudhansu K. Semwal

15:00 – 15:30 Break Ballroom Section A (Exhibit Area)

WIP-Session 3

Track: Work in Progress – Chairs: Mhamed Itmi and Andreas Tolk

Room: Frontenac

15:30 – 17:00

Session Chair: Lisa Blair

ROUTE REASONING-BASED MOBILITY MODELING AND SIMULATION FOR STREET FIGHT USING DEVS

Kyu Cheol Cho, Sung Ho Jang, Chang Hyeon Noh, Tae Young Kim, Jong Sik Lee, Jae Min Lee, Tae Sup Kim and Kang Sun Lee

OPERATORS TRAINING IN CONTAINER TERMINALS BY USING ADVANCED 3D SIMULATION

Antonio Cimino, Francesco Longo and Giovanni Mirabelli

CLOUD DYNAMICS SIMULATION WITH CELLULAR AUTOMATA

Alisson Rodrigo and Maury Gouvea Jr.

LEFT VENTRICLE WALL MOTION ESTIMATION IN ECHOCARDIOGRAPHIC IMAGES

Nadia Souag, Saliha Tamrent, Med Mokhtar Djebbour and Abdelaziz Dahmani

General Track – Track Chair: Peter Kropf

Session EMS: Emergency Simulation

Room: Joliet

10:30 – 12:00

Session Chair: Francesco Longo

A DEVS FIRE JUMPS MODEL AND ASSOCIATED SIMULATIONS USING FOREFIRE

Bahaa Nader, Jean Baptiste Filippi and Paul Antoine Bisgambiglia

SIMULATING THE IMPACTS OF A NEW MADRID EARTHQUAKE ON THE REGIONAL ELECTRIC INFRASTRUCTURE

Edgar Portante, James Kavicky, Stephen Folga, Gustav Wulfkuhle, Brian Craig and Leah Talaber

12:00 – 13:30 LUNCH

Session GT1: Meshes and Vectors

Room: Joliet

13:30 – 15:00

Session Chair: Peter Kropf

A FRAMEWORK FOR MODELING MOSQUITO VECTORS

James Gentile, Gregory Davis, Brandy St. Laurent and Steve Kurtz

ACCELERATING THE COMPUTATION OF PARALLEL TRAJECTORIES OF GRADIENT DESCENT WITH THE CELL-BE MULTIPROCESSOR ENVIRONMENT

Gabriel Wainer and Yuri Boiko

SIMULATING TIGHTLY INTERMESHING CO-ROTATING TWIN SCREW EXTRUDERS WITH SIGMA

Nils Kretzschmar and Volker Schoeppner

15:00 – 15:30 Break Ballroom Section A (Exhibit Area)

WIP-Session 4

Track: Work in Progress – Mhamed Itmi and Andreas Tolk

Room: Joliet

15:30 – 17:00

Session Chair: Jerry Feinberg

A FRAMEWORK OF INTENTIONAL CHARACTERS FOR SIMULATION OF SOCIAL BEHAVIOR

Luís César da Costa, Esteban Walter Gonzales Clua, Gilson Antônio Giraldo, Bruno Richard Schulze, Anselmo A. Montenegro and Reinaldo A. C. Bianchi

DETERMINING OPERATIONAL UTILITY OF THE CULTURAL GEOGRAPHY MODEL

Lisa Bair and Eric Weisel

MODELING AND SIMULATION OF CONFLICT AND PEACEKEEPING

Mamadou Seck

SYNERGY OF THE REINFORCEMENT AND AGENT-BASED TECHNIQUE FOR FINDING OPTIMAL SOLUTION IN A PREDEFINED INTERVAL

Blerim Qela and Hussein Mouftah

Tutorial: The Simio Object Paradigm (beyond ARENA)

Room: Seignior

15:30 – 6:00 PM

Presented by: - Emeritus Professor Ralph C. Huntsinger, Ph.D. California State University, Chico-Humboldt USA

18:30

SummerSim'10/SISO Banquet: Pre-Paid River Boat Dinner

Wednesday, July 14, 2010

KEYNOTE SPEAKER

8:00-9:00

SCSC 2010/SummerSim 2010 keynote

Room: Ballroom Section B

Keynote Speaker: Priscilla Elfrey, NASA.

BUT WHAT IF IT GETS WORSE? REALLY GRAND CHALLENGES FOR MODELING AND SIMULATION IN A RISKY AND COMPLEX WORLD

10:00 – 10:30 Break **Ballroom Section A (Exhibit Area)**
Track: Model-based Design and Simulation – Chair: Hiren Patel

Session MBD1: M&S Methods

Room Laurentian

10:30 – 12:00

Session Chair: Gilbert Arbez

CONSERVATIVE VS. OPTIMISTIC PARALLEL SIMULATION OF DEVS AND CELL-DEVS: A COMPARATIVE STUDY

Shafagh Jafer and Gabriel Wainer

ENHANCING DEVS SIMULATION THROUGH TEMPLATE METAPROGRAMMING: DEVS-METASIMULATOR

Luc Touraille, Mamadou K. Traoré and David R.C. Hill

USING SPECIFICATION AND DESCRIPTION LANGUAGE TO DEFINE AND IMPLEMENT DISCRETE SIMULATION MODELS

Pau Fonseca i Casas

12:00 – 13:30 LUNCH

Track: Model-based Design and Simulation – Chair: Hiren Patel

Session MBD2: Model-based Design

Room Richelieu

13:30 – 15:00

Session Chair: Mamadou Seck

AN ACTIVITY-OBJECT WORLD VIEW FOR ABCMOD CONCEPTUAL MODELS

Gilbert Arbez and Louis Birta

CREATION OF DEVS MODELS USING IMITATION LEARNING

Michael Floyd and Gabriel Wainer

(SYMBOLIC) STATE-SPACE INSPECTION OF A CLASS OF DYNAMIC PETRI NETS

Lorenzo Capra and Walter Cazzola

15:00 – 15:30 Break **Ballroom Section A (Exhibit Area)**

WIP-Session 5

Track: Work in Progress – Chairs: Mhamed Itmi and Andreas Tolk

Room Richelieu

15:30 – 17:00

Session Chair: John Sokolowski

A GAME THEORETICAL APPROACH TO MODELING FULL-DUPLEX INFORMATION DISSEMINATION

Dmitry Zinoviev and Vy Duong

SIMULATION-BASED MAPPING OF CAPACITY-DEPENDENT GENERAL OPTIMAL MARKET AREA MODEL

Zbigniew Pasek and Marzieh Mehrjoo

A SIMULATION MODEL TO IMPROVE AIR CARGO OPERATIONS IN PASSENGER AIRCRAFT

Miquel Angel Piera Eroles

CHALLENGES FOR THE AUTOMATIC GENERATION OF SIMULATION MODELS FOR PRODUCTION SYSTEMS

Bergmann Soeren and Strassburger Steffen

10:00 – 10:30 Break Ballroom Section A (Exhibit Area)

Track: Advanced Selected Topics – Chair: Gianfranco Fancello

Session: MA Microarchitecture and circuits simulation

Room: Frontenac

10:30 – 12:00

Session Chair: Jose L. Risco-Martin

SIMULATING A LAGS PROCESSOR TO CONSIDER VARIABLE LATENCY ON L1 D-CACHE

J. Manuel Colmenar, Oscar Garnica, Juan Lanchares and J. Ignacio Hidalgo

SYMBOLIC FLATTENING OF DEVS MODELS

Bin Chen and Hans Vangheluwe

REAL-TIME STEP MOTOR EMULATION FOR HARDWARE-IN-THE-LOOP SIMULATION

Alvaro Oceguera, Twan Basten, Lou Somers and Sander Hulsenboom

12:00 – 13:30 LUNCH

Session TRA: Simulation for Transportation

Room: Frontenac

13:30 – 15:00

Session Chair: Gianfranco Fancello

A COMPARATIVE STUDY ON CAR OWNERSHIP MODELING BY APPLYING FUZZY LINEAR REGRESSION AND ARTIFICIAL NEURAL NETWORK: CASE STUDY OF IRAN

Koosha Rafiee, Ali Azadeh and Amir-Mohammad Zohrevand

A COMPARISON OF ARTIFICIAL NEURAL NETWORK AND FUZZY LINEAR REGRESSION IN TIRE RELIABILITY ANALYSIS

Koosha Rafiee, Ali Azadeh and Amir-Mohammad Zohrevand

MULTI-HOP SHORTEST PATH COMPUTATION FOR ROTARY WING SEARCH AND RESCUE

Richard McCourt, Slawomir Wesolkowski, Irene Collin and Andrew Billyard

15:00 – 15:30 Break Ballroom Section A (Exhibit Area)

WIP-Session 6

Track: Work in Progress – Chairs: Mhamed Itmi and Andreas Tolk

Room: Frontenac

15:30 – 17:00

Session Chair: Savi Maharai

DEFINING SIMULATION CAPABILITIES FOR POTENTIAL SEA BASE ENABLER: INNOVATIVE NAVAL PROTOTYPE TRANSFORMABLE CRAFT (T-CRAFT)

Ryan Hernandez

MARKOV PROCESS MODELING AND SIMULATION FOR WIRELESS SENSOR NETWORK LIFE ESTIMATION WITH QOS CONSTRAINS

Zhanyang Zhang and Miriam Tausner

SIMULATION OF MARKOVIAN MODELS USING BOOTSTRAP METHOD

Ricardo M. Czekster, Paulo Fernandes, Afonso Sales, Dione Taschetto and Thais Webber

DEVELOPMENT OF VIRTUAL TRAINING SIMULATORS WITH MODELICA

Carla Martin-Villalba, Alfonso Urquia and Sebastian Dormido

Track: GENERAL – Chair: Gabriel Wainer

Session GT2: Advanced Applications

Room: Joliet

10:30 – 12:00

Session Chair: Mamadou Seck

SIMULATION OF STREAM DENITRIFICATION FOR WATERSHED MODEL

Ping Wang, Gary Shenk and Lewis Linker

FORMAL SPECIFICATION AND ANALYSIS OF ACCELERATED HEARTBEAT PROTOCOLS

Muhammad Atif and MohammadReza Mousavi

**ON SIMULATING EPISODIC EVENTS AGAINST A BACKGROUND OF NOISE-LIKE
NON-EPISODIC EVENTS**

Colin Bellinger and John Oommen

12:00 – 13:30 LUNCH

Session GT3: Integration and Evaluation

Room: Joliet

13:30 – 15:00

Session Chair: Pau Fonseca.

**INTEGRATION OF INDUCTION GENERATOR DYNAMICS IN MULTIMACHINE
SYSTEM TRANSIENT ANALYSIS**

Abu Rahim and Edwin Nowicki

**MODELING ENVIRONMENTAL IMPACT AND EFFICIENCY IN MARITIME
LOGISTICS**

Agostino Bruzzone, Marina

18:30 –

OPTIONAL DINNER AT LOCAL RESTAURANTS

2010 Grand Challenges in Modeling & Simulation

Co-sponsored by ACM

General Chair

Roy Crosbie, California State University, Chico, USA

Program Chairs

Terry Ericsen, Office of Naval Research, USA

Kelly Cooper, Office of Naval Research, USA

Ralph Huntsinger, California State University, Chico, USA

Priscilla Elfrey, Kennedy Space Center - NASA, USA

Hamid Vakilzadian, University of Nebraska-Lincoln, USA

Track: VLCS-10

Program Chair: Terry Ericsen , Office of Naval Research, USA

Program co-Chair: Kelly Cooper, Office of Naval Research, USA

Track: MTSA-10

Program Chair: Ralph Huntsinger, CSU Chico-Humboldt, USA

Program co-Chair: Mhamed Itmi. INSA-Rouen, France

Track: ICCRE-10

Program Chair : Priscilla Elfrey, Kennedy Space Center-NASA, USA

Associate Program Chair: Rick Severinghaus, Aegis Technologies, USA

Awards Chair: Mhamed Itmi, INSA-ROUEN, France

Publication Chair: Hamid Vakilzadian, University of Nebraska, Lincoln, USA

Sunday, July 11, 2010

TUTORIAL

13:30-15:00

Room: York

ADVANCED STATISTICAL APPROACHES FOR NETWORK ANOMALY DETECTION

Instructor: Prof. Christian CALLEGARI, University of Pisa, Italy

13:30 – 17:00 PM

Room: Chaudiere

COMPUTER ASSISTED EXERCISES AND SIMULATION

Presented by: Dr. Erdal Cayirci

Monday, July 12, 2010

OPENING SESSION AND KEYNOTE SPEAKER

8:30-10:00

Room: Ballroom Section B

GCMS 2010/SummerSim 2010 keynote

Keynote Speaker: Azzedine Boukerche (SITE, University of Ottawa)

DISTRIBUTED SIMULATION SYSTEM - A NECESSARY PUBLIC SECURITY AND SAFETY TESTBED FOR AN URBAN EMERGENCY PREPAREDNESS CLASS OF APPLICATIONS

10:00 – 10:30 Break

Ballroom Section A (Exhibit Area)

Session M1: Total Platform Design I

Room: Chaudiere

10:30 – 12:00

Session Chair: Kelly Copper, ONR

A LARGE-SCALE 3-DIMENSIONAL COMPUTATIONAL WAVE BASIN MODEL FOR EXPERIMENTAL DESIGN AND VIRTUAL TESTING

Solomon C. Yim and Wenbin Zhang

AN END-TO-END SIMULATOR FOR THE ALL-ELECTRIC SHIP MVDC INTEGRATED POWER

Mirjana Milosević Marden, Pradya Prempraneerach, George Karniadakis and Chryssostomos Chryssostomidis

SHIP DESIGN OPTIMIZATION CONSIDERING UNCERTAINTY

Wayne Neu

Session M2: Trends

Room: Laurentian

10:30 – 12:00

Session Chair: Dr. Ralph Huntsinger

MULTILEVEL SPLITTING FOR REACHABILITY ANALYSIS OF STOCHASTIC HYBRID SYSTEMS

Derek Riley, Xenofon Koutsoukos and Kasandra Riley

MULTIVARIATE STATISTICAL MODELING ON THE 3-STATE (UP, DERATED, DOWN) AVAILABILITY OF REPAIRABLE HARDWARE UNITS AND NETWORKS WITH THE SAHINOGLU- LIBBY PROBABILITY DISTRIBUTION USING MONTE CARLO SIMULATION

Mehmet Sahinoglu and Yanling Yuan

NEXT GENERATION MODELING AND SIMULATION - FUTURE VISION AND KEY TECHNOLOGIES

Guo Gang

10:30 – 12:00 PM

Session M3: M&S Education Panel

Room Seigniory

Organizer: Helena Szczerbicka, SCS VP of Education and Professor of Universität Hannover, Germany

Panel Members: Matthias Kölsch, Moves Institute, NPS

John Sokolwski, Director, VMASC

Mamadou D. Seck, TU Delft

Brian Goldiez, Director, UCF

Hessam Sarjoughian, ASU

Bill Waite, AEGIS

Bill Tucker, Boeing

Dietmar Möller, TU Hamburg

Raisa Khamitova, Blekinge Institute of Technology

12:00 – 13:30 LUNCH

Session M4: Model Order I – Level and Priority

Room: Chaudiere

13:30 – 15:00

Session Chair: Dr. Roger Dougal

AN INTEGRATIVE ENGINEERING APPROACH FOR MANAGING THE THREAT OF CAPABILITY SURPRISE

Janel Nixon

STOCHASTIC BASED SENSITIVITY FUNCTION FOR MODEL LEVEL SELECTION IN SYSTEM SIMULATION

Andrea Benigni, Ferdinanda Ponci and Antonello Monti

ON THE IMPORTANCE OF BEING EARNESTLY PRACTICAL

Francis Noblesse

Session M5: Multi-Physical Methods

Room: Laurentian

13:30 – 15:00

Session Chair: Dr. Stanislaw Raczinsky

NUMERICAL OPTIMIZATION OF GENERATIVE NETWORK PARAMETERS

Joshua Taylor and Franz Hover

DTMS: A FRAMEWORK FOR SYSTEM-LEVEL, DYNAMIC SIMULATIONS ACROSS MULTI-DISCIPLINARY BOUNDARIES

Michael Pierce and Thomas Kiehne

MULTI-PHYSICAL SIMULATIONS OF CURRENT-INDUCED DOMAIN WALL MOTION USING GRAPHICS PROCESSING UNITS

Andre Drews, Gunnar Selke and Dietmar P. F. Moeller

15:00 – 15:30 Break Ballroom Section A (Exhibit Area)

Session M6: Complexity in Platform Simulations

Room: Chaudiere

15:30 – 18:00

Session Chair: Dr. Roy Crosbie, California State University-Chico

VISUALIZATION TOOL FOR NOTIONAL ALL-ELECTRIC SHIPS DATA BASES

Jeferson Souza, F. O'Lary, Rob Hovsopian, Juan Ordonez, Jose Vargas and Julie Chalfant

HOW TO DISTRIBUTE MODELING EFFORT FOR COMPLEX SYSTEMS

Santiago Balestrini Robinson and Dimitri Mavris

IMPACT OF COMPLEXITY AND NONLINEARITIES IN POWER ELECTRONIC BASED SYSTEMS

Michael Sattler, Ralph Wilson, Touria El-mezyani, Sanjeev Srivastava, Chris Edrington and David Cartes

WHOLE-SHIP SIMULATION IN THE DESIGN OF SURFACE-EFFECT SHIPS

Chris McKesson and Lawrence Doctors

AIR CUSHION ACTIVE CONTROL FOR THE REDUCTION OF WAVE INDUCED MOTION OF RAMP-CONNECTED SHIPS

Authors: Miroslav Krstic, Joseph Doblack, Halil Basturk and Artem Chakirov

Session M7: Framework

Room: Laurentian

15:30 – 18:00

Session Chair: Dr. Lin Zhang

DISCRETE-EVENT SIMULATION IN JAVA -- A PRACTITIONER'S EXPERIENCE

David H. King and Harvey S. Harrison

CONCURRENT PRODUCT DATA MODELING

David Fullmer and Dimitri Mavris

CO-SIMULATION IN LARGE SCALE ENVIRONMENTS USING THE HPNS FRAMEWORK

Sebastian Bohlmann, Volkhard Klinger and Helena Szczerbicka

VSIM: A VIRTUAL SIMULATION FRAMEWORK FOR HIGH PERFORMANCE SIMULATION

Authors: Lei Ren and Lin Zhang

CHALLENGES IN TESTING AND VALIDATING OPERATIONAL SPACECRAFT SIMULATORS

Marta Pantoquilha

Tuesday, July 13, 2010

KEYNOTE SPEAKER

8:00-9:00 AM

GCMS 2010/SummerSim 2010 keynote

Room: Ballroom Section B

Keynote Speaker: John Oommen, (SCS, Carleton University)

ON UTILIZING DEPENDENCE-TREE MODELING IN ARBITRARY SIMULATIONS

Room T1: Session Multibody Dynamic I

Room: Chaudiere

9:00 – 10:00

Session Chair: Dr. Narain Hingorani

AN INTEGRATED MULTIBODY DYNAMICS FOR LAND AND MARINE SYSTEMS

Ashraf Zeid and Ly Nguyen

EFFICIENT LARGE SCALE SIMULATION OF A SHIP POWER SYSTEM WITH ENERGY STORAGE AND MULTIPLE PULSED POWER LOADS

Angelo Gattozzi, Robert Hebner and John Herbst

Room T2: Session Education

Room: Laurentian

9:00 – 10:00

Session Chair: Dr. Ralph Huntsinger

CHALLENGES IN DEVELOPMENT OF AN UNDERGRADUATE M&S PROGRAM IN ELECTRICAL ENGINEERING

Hamid Vakilzadian and Dietmar Möller

INTEGRATING MODELING AND SIMULATION INTO AN E-LEARNING ENVIRONMENT IN ENGINEERING STUDY PROGRAMS

Dietmar Moeller and Hamid Vakilzadian

10:00 – 10:30 Break

Ballroom Section A (Exhibit Area)

Session T3: Model Order II – Simple or Not?

Room: Chaudiere

10:30 – 12:00

Session Chair: Dr. Steinar Dale

THE UTILITY OF VERY SIMPLE MODELS FOR VERY COMPLEX SYSTEMS

Chris McKesson

PROBABILITY BASED SIMULATION OF STERN SLAMMING DESIGN EVENTS

Dae-Hyun Kim, Laura Alford and Armin Troesch

INTEGRATED SIMULATION WITH VTB AND OPNET FOR NETWORKED CONTROL AND PROTECTION IN POWER SYSTEMS

Weilin Li and Antonello Monti

Session T4: Problems with Extremely Large Heterogeneous Data

Room: Laurentian

10:30 – 12:00

Session Chair: Terry Ericson, ONR

IMMUNE SYSTEMS INSPIRED APPROACH TO ANOMALY DETECTION, FAULT LOCALIZATION AND DIAGNOSIS IN A GENERATOR

Dragan Djurdjanovic, Clay Hearn and Yi Liu

METHODS FOR MODELLING COMPLEX INTERACTIONS BETWEEN PATIENTS AND CARERS IN DEMENTIA MANAGEMENT.

Victor Vickland

GEOLOGICAL DISPOSAL ANALYSIS IN SALT LEACHING ROCK THROUGH MODELING AND SIMULATION

Dietmar P. F. Moeller and Rolf Bielecki

12:00 – 13:30 LUNCH

Session T5: Multibody Dynamic II

Room: Chaudiere

13:30 – 15:00

Session Chair: Dr. Roy Crosbie

METHOD OF EVALUATION OF MULTI-VESSEL SURFACE EFFECT SHIP MOTION PREDICTION CODES

Andrew Silver and Michael Hughes

ON REDUCING COMPUTATIONAL COMPLEXITY IN EVALUATING THE TOPOLOGICAL SURVIVABILITY OF POWER SYSTEMS

Svetlana Poroseva

LOAD PASSING THROUGH A "WAVE BARRIER" IN A BEAM ON AN ELASTIC FOUNDATION

Juliusz Sołkowski

Session T6: Multiplatform Integration

Room: Laurentian

13:30 – 15:00

Session Chair: Dr. Steinar Dale

A GUI SYSTEM FOR INTEGRATING PHOTOVOLTAIC AND WIND UNITS INTO POWER GRIDS

Adel Ghandakly and Rostan Rodrigues

REDUCING HARMONICS IN BI-DIRECTIONAL UTILITY INTERFACE FOR PLUG-IN HYBRID ELECTRIC VEHICLES

Nathan Weise, Krushna Mohapatra and Ned Mohan

INVESTIGATIONS FOR ENHANCING RIDE-THROUGH PERIOD IN MATRIX CONVERTER DRIVEN WIND GENERATORS USING MATLAB/SIMULINK.

Rashmi Prasad, Krushna Mohapatra and Ned Mohan

15:00 – 15:30 Break

Ballroom Section A (Exhibit Area)

Session T7: Total Platform Design II

Room: Chaudiere

15:30 – 17:30

Session Chair: Terry Ericson, ONR

GUIDELINES FOR THE SPECIFICATION OF MODELS TO BE USED IN DESIGN-ORIENTED SIMULATIONS

Mohd Hasan Ali, Roger A Dougal, Mischa Steurer, Lukas Graber, John Ciezki, Steve Pekarek, Mike Andrus, Diomar Infante, Robert Hebner, Hamid Ouroua and Damon Weeks

EVALUATION OF A COMPUTATIONAL TOOL FOR SUITABILITY IN INITIAL DESIGN

Raju Datla

APPLYING ADVANCED SIMULATION IN EARLY STAGE UNCONVENTIONAL SHIP DESIGN

Matthew Collette, Woei-Min Lin and Jun Li

ANALYSIS OF DIFFERENT APPROACHES TO THE REUSE OF SIMULATION MODELS FOR THE VIRTUAL KNOWLEDGE-BASED PRODUCT DEVELOPMENT
Alexander Verl and Verena Mueller

Session T8: Solid-State Devices and Machines

Room: Laurentian

15:30 – 17:30

Session Chair: Dr. Narain Hingorani

EMI MODELING OF BUCK CONVERTER USING A GENERALIZED TERMINAL MODEL

Hemant Bishnoi, Andrew Baisden, Paolo Mattavelli and Dushan Boroyevich

ELECTROMIGRATION TIME TO FAILURE

Cemal Basaran

MODELING AND SIMULATION OF SIC MOSFET FAST SWITCHING BEHAVIOR UNDER CIRCUIT PARASITICS

Zheng Chen and Dushan Boroyevich

SIMULATION OF A DC-DC BOOST CONVERTER'S PARAMETER SPACE

Chika Nwankpa, Juan Jimenez and Anawach Sangswang

Tutorial: The Simio Object Paradigm (beyond ARENA)

Room: Seignior

15:30 – 6:00 PM

*Presented by: - Emeritus Professor Ralph C. Huntsinger, Ph.D.
California State University, Chico-Humboldt USA*

18:30

SummerSim'10/SISO Banquet: Pre-Paid River Boat Dinner

Wednesday, July 14, 2010

KEYNOTE SPEAKER

8:00-9:00

GCMS 2010/SummerSim 2010 keynote

Room: Ballroom Section B

Keynote Speaker: Priscilla Elfrey, NASA.

BUT WHAT IF IT GETS WORSE? REALLY GRAND CHALLENGES FOR MODELING AND SIMULATION IN A RISKY AND COMPLEX WORLD

SessionW1: Computational Fluid Dynamics

Room: Chaudiere

9:00 – 10:00

Session Chair: Kelly Cooper, ONR

HULL FORM OPTIMIZATION FOR REDUCED RESISTANCE AND IMPROVED SEAKEEPING VIA PRACTICAL DESIGNED-ORIENTED CFD TOOLS

Hyunyul Kim, Chi Yang and Francis Noblesse

HYDROELASTIC IMPACT OF STERN STRUCTURE USING CFD AND FEA

Kevin Maki, Donghee Lee, Dominic Piro and Matthew Collette

Session W2: Temporal and Spatial

Room: Laurentian

9:00 – 10:00

Session Chair: Dr. Dietmar Moeller, University of Hamburg

SPECTRAL ELEMENT/SMOOTHED PROFILE METHOD FOR TURBULENT FLOW SIMULATIONS OF WATERJET PROPULSION SYSTEMS

Xian Luo, Chryssostomos Chryssostomidis and George Em Karniadakis

A MODEL SPECIFIC SIMULATION OF POWER DISTRIBUTION GRIDS FOR NON-DESTRUCTIVE TESTING OF NETWORK RECONFIGURATION SCHEMES

Christian Schegan, Valentina Cecchi, Xiaoguang Yang and Karen Miu

Session W3: JOINT GCMS/SISO ICCRE Session

Room: Richelieu

9:00 – 10:00

Session Chair: Priscilla Elfrey, NASA

10:00 – 10:30 Break

Ballroom Section A (Exhibit Area)

Session W4: New Design Tools

Room: Chaudiere

10:30 – 12:00

Session Chair: Dan Sheridan

STUDY OF PARALLEL AC AND DC ELECTRICAL DISTRIBUTION IN THE ALL-ELECTRIC SHIP

Julie Chalfant, Chryssostomos Chryssostomidis and Matthew Angle

PROGRESS TOWARDS A LOW-COST HIGH-SPEED REAL-TIME MULTI-RATE SIMULATOR

John Zenor, Dale Word, Richard Bednar, Roy Crosbie and Narain Hingorani

FINITE ELEMENT SIMULATION OF COMPOSITE SHIP STRUCTURES WITH FLUID STRUCTURE INTERACTION

Hassan Mahfuz and Siyuan Ma

Session W5: JOINT GCMS/SISO ICCRE Session

Room: Richelieu

10:30 – 12:00

Session Chair: Priscilla Elfrey

12:00 – 13:30 LUNCH

Session W6: Digital Real Time Simulation

Room: Chaudiere

13:30 – 15:00

Session Chair: Dr. Ned Mohan

MULTI-RATE AND INTEGRATED PACKAGE SIMULATION

John Pearce

MULTI-RATE SIMULATION ACCURACY IMPROVEMENT FOR LINEAR SYSTEMS USING HOLD NETWORKS

Richard Bednar and Roy Crosbie

HIGH-SPEED DIGITAL INTERFACE FOR A REAL-TIME DIGITAL SIMULATOR

Michael Sloderbeck, Michael Andrus, James Langston and Michael Steurer

Session 7: Computational Methods

Room: Laurentian

13:30 – 15:00

Session Chair: Dan Sheridan

PROPELLER BLADE STRESS ESTIMATES USING LIFTING LINE THEORY

Brenden Epps, Jerod Ketcham and Chrysostomos Chrysostomidis

NUMERICAL SIMULATION OF SURFACE EFFECT SHIPS IN WAVES

Woei-Min Lin, Sheguang Zhang and Kenneth Weems

BENCHMARKING DIFFERENT DIRECT SOLUTION METHODS FOR THE SIMULATION OF LARGE POWER SYSTEMS

Andrea Benigni, Paolo Bientinesi and Antonello Monti

A METHOD FOR COUPLING PHASOR AND TIME DOMAIN NETWORKS

Joseph Hood and Roger Dougal

15:00 – 15:30 Break

Ballroom Section A (Exhibit Area)

Session W8: Technology

Room: Chaudiere

15:30 – 17:30

Session Chair: Dr. Dietmar Moeller, University of Hamburg

THE SIMULATION AND DATA VISUALIZATION POTENTIAL OF MICROSOFT'S XNA

Jeremiah Shepherd

PRELIMINARY WORK ON GRAPHICS PROCESSING UNIT BASED DIRECT SIMULATION MONTE CARLO

Denis Gladkov, Jose-Juan Tapia and Roshan M. D'Souza

INTEGRATING SIMULATION AND CAD SOFTWARE AND PROCESSES FOR EARLY STAGE NAVAL SHIP DESIGN

David Andrews and Richard Pawking

THE ARGUMENT FOR A RADICAL AND EXPLORATORY APPROACH TO PRELIMINARY SHIP DESIGN

David Andrews

Session 9: Control and Structure

Room: Laurentian

15:30 – 17:30

Session Chair: Dr. Roger Dougal

PROGRESS IN THE DEVELOPMENT OF ADAPTIVE CONTROL FOR SHIPBOARD POWER SYSTEMS THROUGH MODELING AND SIMULATIONS

A J Mair, R R Soman, P C Baker, E M Davidson, S D J McArthur, S K Srivastava, M Andrus and D A Cartes

MODELLING AND SIMULATION OF ADVANCED NON-LINEAR AUTOPILOT DESIGNS

Joseph Brindley, John Pearce and John Counsell

GROUNDING STUDIES IN A MEDIUM VOLTAGE DC SHIPBOARD POWER SYSTEM WITH UNCERTAIN PARAMETERS

Dorca Lee, Diomar Infante, James Langston, Svetlana Poroseva, Michael Steurer and Thomas Baldwin

FUTURE HOME DC-BASED RENEWABLE ENERGY NANOGRIID SYSTEM

Igor Cvetkovic, Dushan Boroyevich, Fred C. Lee, Paolo Mattavelli, Dong Dong, Li Jiang and Yue Chang

18:30 –

OPTIONAL DINNER AT LOCAL RESTAURANTS

SummerSim'10 Poster Track

General Chair

Abdolreza Abhari, Ryerson University, Canada

Program Co-Chairs

Mohammad Moallemi, Carleton University, Canada

Yuri Boiko, Carleton University, Canada

Tuesday, July 13, 13:00 -14:00

Wednesday, July 14, 9:00-10:00

Ballroom Section A (Exhibit Area)

MODERNIZING LEGACY SIMULATIONS

Matt Harrison

A SUBMARINE CONTROLLED UNMANNED AIRCRAFT SYSTEM (UAS)

David Cwalina and Wayne Belanger

A BATTLE FOR A FOREST: A MODEL OF FIRE-FIGHTERS ACTIONS BASED ON LIMITED INFORMATION

Pawel Kulakowski, Eusebi Calle and Jose Luis Marzo

EARTHQUAKE FIRST RESPONDER PREPARATION A TRAINING PERSPECTIVE

David Henry and Denise Benkert

COLORED PETRI NETS-BASED VERIFICATION OF SIMULATION SCENARIOS

Fei Liu, Weijing Wang, Xinping Xiong and Ming Yang

AN AGENT-BASED MODEL OF SOCIAL INTERACTIONS AMONG DRINKERS AND ABSTAINERS

Qi Zheng and Dennis Gorman

DEVS-BASED MODELING SIMULATION FOR SEMICONDUCTOR MANUFACTURING USING AN ADAPTIVE JOB CONTROL FRAMEWORK

Hae Sang Song, Jae Young Lee and Tag Gon Kim

REPRESENTING FIBONACCI FUNCTION THROUGH CELLULAR AUTOMATA USING SPECIFICATION AND DESCRIPTION LANGUAGE

Pau Fonseca, Casas, Màxim Colls and Josep Casanovas

WEALTH ACCUMULATION EFFECT IN A MULTI-AGENT ECONOMIC MODEL

Victor Romanov, Dmitriy Yakovlev and Anna Lelchuk

**ENHANCING REUSABILITY OF CONSTRUCTION SIMULATION MODELLING
USING KNOWLEDGE ENGINEERING TECHNIQUES**

Farzaneh Saba and Yasser Mohamed

**DESIGN AND IMPLEMENTATION OF CONFIGURABLE SIMULATION SYSTEM FOR
EMBEDDED SOFTWARE BASED ON MDA**

Xiang Ji, Yunwei Dong and Yuying Wang

**TIME MANAGEMENT IN MULTILAYERED MODELING AND SIMULATION
ARCHITECTURE**

Emilie Broutin, Paul Bisgambiglia and Jean-Francois Santucci

A SUSTAINABLE APPROACH TO BUILDING REGIONAL COMPETITIVENESS

Mhamed Itmi, Alain Cardon, Srini Ramaswamy, Ludovic Couturier, Jerome Verny
and Abdelkhalak El Hami

**THE EFFECTS OF PRE-PROCESSING METHODS ON FORECASTING
IMPROVEMENT OF ARTIFICIAL NEURAL NETWORKS**

Ali Azadeh

**FUZZY MODELING AND SIMULATION OF AN EMERGENCY DEPARTMENT FOR
IMPROVEMENT OF THE QUALITY CARE IN NOISY AND UNCERTAIN
ENVIRONMENTS**

Fatemeh Rouhollah, Ali Azadeh, Iraj Mohammadfam and Fatemeh Davoudpour

MODELING AND CONTROLLING A ROBOTIC ARM WITH E-CD++

Faezeh Rafsanjani Sadeghi, Gabriel Wainer, Mohammad Moallemi

**ANALYSIS AND IMPROVEMENT OF A MAMMOGRAPHY CLINIC PATIENT FLOW
BY FUZZY SIMULATION**

Fatemeh Rouhollah, Ali Azadeh and Yashar Tavasoli

2010 SISO Program

Organizing Committee

Stephen J. Swenson, AEgis Technologies Group
Sarah T. Epps, Cutlass Systems Engineering LLC
James Coolahan, Johns Hopkins University

Conference Committee

Winston Bennett, USAF 711 HPW/RHAS
Priscilla Elfrey, NASA Kennedy Space Center
Jason Esteve, ITT Corporation
David Graham, CAE USA
Grover Lollar, General Dynamics Information Technology
Richard Reading, Cutlass Systems Engineering LLC
Austin Stoudenmire, Alion Science and Technology
Duncan C. Milller, Sc.D., Executive Director, SISO

Sunday, July 11, 2010

TUTORIAL

13:30-15:00

Room: York

ADVANCED STATISTICAL APPROACHES FOR NETWORK ANOMALY DETECTION

Instructor: Prof. Christian CALLEGARI, University of Pisa, Italy

13:30 – 17:00 PM

Room: Chaudiere

COMPUTER ASSISTED EXERCISES AND SIMULATION

Presented by: Dr. Erdal Cayirci

Monday, July 12, 2010

8:30-10:00

OPENING SESSION AND KEYNOTE SPEAKER

Room: Ballroom Section B

SISO 2010/SummerSim 2010 keynote

Keynote Speaker: Azzedine Boukerche (SITE, University of Ottawa)

DISTRIBUTED SIMULATION SYSTEM - A NECESSARY PUBLIC SECURITY AND SAFETY TESTBED FOR AN URBAN EMERGENCY PREPAREDNESS CLASS OF APPLICATIONS

10:00 – 10:30 Break

Ballroom Section A (Exhibit Area)

10:30-12:00

Session: DISTRIBUTED SIMULATION PROCESSES AND TECHNIQUES

Session Chair: James (Mark) McCall, General Dynamics Information Technology

Room: Victoria

10E-SIW-021: SEMANTIC ENHANCEMENTS WHEN DESIGNING A BOM-BASED CONCEPTUAL MODEL REPOSITORY

Eric-Oluf Svee, Jelena Zdravkovic, Vahid Mojtahed

10E-SIW-037: 3CE METHODOLOGY FOR CONDUCTING A MODELING, SIMULATION, AND INSTRUMENTATION TOOL CAPABILITY ANALYSIS

Mr William Self, Ms Susan Harkrider

10E-SIW-036: ACCURACY AND PERFORMANCE ASSESSMENT OF THE SRM IMPLEMENTATION

Farid Mamaghani, Dr. Ralph Toms, Dr. Robert Cox, Mr. Paul Dumanoir, Dr. Paul Berner, Ms. Michele Worley, Mr. David Shen, Mr. Kevin Trott

12:00 – 13:30 LUNCH

13:30-15:00

SESSION: DISTRIBUTED SIMULATION PROCESSES AND TECHNIQUES

Session Chair: James (Mark) McCall, General Dynamics Information Technology

Room: Victoria

10E-SIW-011: TOWARDS AN HLA RUN-TIME INFRASTRUCTURE WITH HARD REAL-TIME CAPABILITIES

Dr Martin Adelantado, Dr Pierre Siron, Phd Jean-Baptiste Chaudron

10E-SIW-032: UNLOCKING DATA: REALIZING THE HIDDEN POTENTIAL OF DISCRETE DATA FORMATS

Mr Eric Watz, Mr Daniel DeFabritis, Mr Jerry Hargrove

10E-SIW-029: THREE SIMPLE TECHNIQUES FOR IMPROVING THE QUALITY OF DIS BASED CROWD SIMULATIONS

Robert Ioiart, Jonathan Searle, Mike Bathe

15:00 – 15:30 Break Ballroom Section A (Exhibit Area)

15:30-17:00

Session: RESEARCH, DEVELOPMENT, AND ENGINEERING

Session Chair: Winston (Wink) Bennett, Jr., US Air Force

Room: Victoria

10E-SIW-002 SMOKE STEGANOGRAPHY ALGORITHM

Samueal Keefelegn

10E-SIW-025: SURVEY STUDY OF THE QOS MANAGEMENT IN DISTRIBUTED INTERACTIVE SIMULATION THROUGH DEAD RECKONING ALGORITHMS

Ms Hakiri Akram, Ms Berthou Pascal, Ms Gayraud Thierry

10E-SIW-001: METHODOLOGY SUPPORTING ARCHITECTURE VALIDATIONS

Johnny Garcia

18:00 – 19:30

JOINT RECEPTION AT CONFERENCE HOTEL

TUESDAY, JULY 13, 2010

8:30 – 9:30 AM

Session: PRODUCT DEVELOPMENT GROUP REPORT

Session Chair: Scott Johnston, Booz Allen Hamilton

Room: Victoria

REPORT ON COALITION BATTLE MANAGEMENT LANGUAGE (C-BML)

Kevin Heffner

9:30 – 10:00 AM

Session: TRAINING

Session Chair: Scott Johnston, Booz Allen Hamilton

Room: Victoria

10E-SIW-035: A BUSINESS ANALYSIS FOR THE IMPLEMENTATION OF VIRTUAL WORLDS IN TRAINING AND DEVELOPMENT COURSES AND VIRTUAL WORK GROUPS IN THE CANADIAN FORCES

Derek Sebalj, Greg McPherson

10:00 – 10:30 Break Ballroom Section A (Exhibit Area)

10:30 – 12:00

Session: TRAINING

Session Chair: Scott Johnston, Booz Allen Hamilton

Room: Victoria

10E-SIW-012: PREPARING FOR LARGE FORCE EXERCISES WITH DISTRIBUTED SIMULATION (PANEL DISCUSSION)

Panel Members: Dr Peter Crane, Ms Ebb Smith, Mr Jonathan Borgvall, Mr Andrew Robbie, Dr Winston Bennett, Mr Mike France, Mr Robert Anderson, Dr Martin Castor, Mr Niclas Lagerback, Mr Patric Laven

12:00 – 13:30 LUNCH

13:30-15:00

SESSION: TRAINING

Session Chair: Scott Johnston, Booz Allen Hamilton

Room: Victoria

10E-SIW-026: AN APPROACH FOR LVC INTELLIGENT GATEWAY SOLUTIONS FOR THE ARMY LVC ITE

Mr. Darrell Boyer, Mr. Harry Sotomayor

10E-SIW-027: AN APPROACH FOR LVC SCENARIO GENERATION AND INITIALIZATION FOR THE ARMY LVC ITE

Mr. Darrell Boyer, Mr. Harry Sotomayor, Mr. Richard Link

10E-SIW-015: AN AGENT-ORIENTED APPROACH TO DEVELOPING INTELLIGENT TRAINING SIMULATORS

Dr Vijay Rao, D, Babloo Saha

15:00 – 15:30 Break

Ballroom Section A (Exhibit Area)

15:30-16:00

Session: COMMUNICATION FRAMEWORKS AND INFRASTRUCTURE

Session Chair: Joe Sorroche, USAF ASRCC/DMOC

Room: Victoria

10E-SIW-023: ADDRESSING THE CHALLENGE OF DISTRIBUTED INTERACTIVE SIMULATION WITH DATA DISTRIBUTION SERVICE

Ms Hakiri Akram, Ms Berthou Pascal, Ms Gayraud Thierry

16:00 – 17:00

Session: SIMULATION AND ENVIRONMENT REUSE

Session Chair: Joe Sorroche, USAF ASRCC/DMOC

Room: Victoria

10E-SIW-005: MISSIONLAND: USER NEEDS FOR A VIRTUAL CONTINENT
Arjan Lemmers, Arno Gerretsen, Marcel Kleijhorst

10E-SIW-028: TOWARDS A UK TERRAIN DATABASE GENERATION CAPABILITY
Bijal Shah, Miss, Ian Greig, Mr, Grant Bailey, Mr, Mr John Brookes

18:30

SummerSim'10/SISO Banquet: Pre-Paid River Boat Dinner

Wednesday, July 14, 2010

KEYNOTE SPEAKER

8:00-9:00

SISO 2010/SummerSim 2010 keynote

Room: Ballroom Section B

Keynote Speaker: Priscilla Elfrey, NASA

BUT WHAT IF IT GETS WORSE? REALLY GRAND CHALLENGES FOR MODELING AND SIMULATION IN A RISKY AND COMPLEX WORLD

9:00 – 10:00

Session: International Interoperability of Complex Large Safety-critical High-risk Systems

Room: Richelieu

Moderator: Joachim Fuchs

Panel Members: Rick Severinghaus
Mike Conroy
Francesco Longo
Gregory Zarecarewicz

10:00 – 10:30 Break Ballroom Section A (Exhibit Area)

10:30-12:00

SESSION: INTERNATIONAL COOPERATION FOR CRISES AND RISKY ENTERPRISES (Panel Discussion)

Room: Richelieu

Moderator: Joachim Fuchs

Panel Members: Rick Severinghaus
Mike Conroy
Francesco Longo
Gregory Zarecarewicz

12:00 – 13:30 LUNCH

13:30 – 15:00

Session: COMMUNICATION FRAMEWORKS AND INFRASTRUCTURE

Session Chair: Joe Sorroche, USAF ASRCC/DMOC

Room: Victoria

**10E-SIW-020: IMPLEMENTATION OF IEEE DIS DEEP PACKET INSPECTION
FIREWALL IN FPGA HARDWARE**

Mr Andrew Robbie, Mr Hugh Ackland

**10E-SIW-013: AN AREA OF MANAGEMENT APPROACH FOR HLA-BASED
DISTRIBUTED VIRTUAL ENVIRONMENTS**

Samir Torki, Patrice Torguet, Cédric Sanza, Jean-Pierre Jessel

**10E-SIW-010: HYPERSIM: AN INTEGRATED HLA SIMULATION PLATFORM FOR
WEAPON SYSTEM DESIGN**

Prof Wen Zhao, PhD, Jian Peng, Engineer

15:00 – 15:30 Break Ballroom Section A (Exhibit Area)

15:30-17:00

Session: COMMAND AND CONTROL MODELING AND SIMULATION

Session Chair: Joe Sorroche, USAF ASRCC/DMOC

Room: Victoria

**10E-SIW-008: INTEGRATING NATIONAL C2 AND SIMULATION SYSTEMS FOR
BML EXPERIMENTATION**

Dr. Kevin Heffner, Lionel Khimeche, Ole Martin Mevassvik, Nico de Reus, Dr.
Ulrich Schade, Ricardo Gomez-Viega, Dr. J. Mark Pullen, Adam Brook

**10E-SIW-033: IMPLEMENTING A CONDENSED SCRIPTING LANGUAGE IN THE
SCRIPTED BATTLE MANAGEMENT LANGUAGE WEB SERVICE**

Samuel Singapogu, Bhargava Bulusu, Dr. J. Mark Pullen

**10E-SIW-034: SIMULATION INTEROPERABILITY FOR CIVILIAN AND MILITARY
EMERGENCY MANAGEMENT**

Mr John Richardson

18:30 –

OPTIONAL DINNER AT LOCAL RESTAURANTS