WMC '04

2004 Western Simulation MultiConference Final Program

January 18–22, 2004
Catamaran Resort Hotel
San Diego, California, USA

General Chair:
Hamid Vakilzadian, University of Nebraska-Lincoln
Program Chair:
Waleed Smari, University of Dayton, Ohio
Associate VP and Exhibits Chair:
Francois Cellier, University of Arizona
Publicity Chair:
Chell Roberts, Arizona State University

SCS
Sponsored by The Society for Modeling and Simulation International
www.scs.org

WMC'04 General Chair's Message

Hamid Vakilzadian
General Chair, WMC'04

On behalf of the 2004 Western Simulation MultiConference (WMC'04) Organizers, it is our great pleasure to welcome you to this conference. WMC'04 brings together six unique conferences on a variety of topics ranging from health sciences to nuclear power simulation. These conferences offer a unique forum for researchers or practitioners to share their expertise and achievements and provide an opportunity to explore the breadth and the depth of many modeling and simulation techniques, tools, and their applications. The individual conference committees of WMC'04 tracks have developed a program that includes presentations, panel sessions, featured speakers, and opportunities for informal gatherings. We encourage you to participate fully in learning, sharing, and forming collaborations.

This is the third year for the International Symposium on Collaborative Technologies and Systems. This conference, organized by Dr. Waleed Smari and Dr. Bill McQuay, addresses the multidisciplinary nature of modeling and simulation from a diverse group of simulation experts. Organizers of this conference have scheduled several keynote addresses, plenary sessions, demos, tutorials, exhibits and a forum that should have broad appeal. Several of the conferences have been with WMC for many years providing a consistent forum for advancing simulation. The International Conference on Health Sciences, organized by Dr. Jim Anderson and Dr. Meyer Katzper, is offering a workshop by leading authorities in addition to quality general sessions. The International Conference on Simulation in Education (organized by Dr. Arnold Pears and Dr. Chell Roberts) and the Conference on Communication Networks and Distributed Systems Modeling and Simulation (organized by Dr. Taieb Znati and Dr. Bruce McDonald) continue to address time-proven issues in their respective areas. Several years ago the International Conference on Fossil Simulation and Training (organized by Mr. Richard Pennington and Mr. Merrill Quintrell) and the International Conference on Simulation Technology for Nuclear Power Plants and Systems (organized by Mr. Scott Halverson) joined WMC. These conferences continue to bring together a unique and important segment of simulation experts addressing growing needs in the power industry.

WMC'04 is being held in San Diego, one of the world's premiere travel destinations that is well known for its climate and scenic areas. We hope you will plan to stay a few extra days to visit some of the many local attractions, including: Beaches, golf courses, Sea World, San Diego Wild Animal Park, Old San Diego, many parks and museums, historical sites, theatrical productions, and concerts. Catamaran Resort Hotel, the conference site, is a waterfront tropical resort on Mission Bay that offers excellent conference settings in addition to the fine dining.

The individual conference organizers deserve great admiration for the success of WMC. It is they who work diligently to enlist participants, review papers, organize panels and exhibits, and finalize programs. The SCS staff, especially Mr. Steve Branch, deserves praise for working with limited resources to support and facilitate this event. The hard work of Dr. Waleed Smari, WMC'04 Program Chair, Dr. Francois Cellier, Associate VP of WMC, and Dr. Chell Roberts, Publicity Chair, and Mr. Wayne Ingalls, CD-ROM Chair deserves special recognition. Finally, I owe a special debt of gratitude to Dr. Frazer Williams, Interim Chair of the Dept. of Electrical Engineering, University of Nebraska-Lincoln, for providing me with the time and support for this conference.

We appreciate your input and participation in making this conference a valuable resource and opportunity for advancing modeling and simulation. Once again, on behalf of SCS, its conference board, and the organizers of WMC, I welcome you all to the conference.

Hamid Vakilzadian
General Chair, WMC'04

WMC 2004 Registration

Location: Kon Tiki Ballroom Foyer

The conference registration/information desk will be open during the following hours:

Sun., January 18	**8:00am—5:00pm**
Mon., January 19	**7:00am—5:00pm**
Tue., January 20	**7:00am—5:00pm**
Wed., January 21	**7:00am—3:00pm**

WMC 2004 Exhibition Area

Location: Kon Tiki Ballroom

The Exhibit area will be open immediately following the WMC 2004 Keynote Address according to the following schedule:

Mon., January 19	**10:00am—7:30pm**
Tue., January 20	**10:00am—5:00pm**
Wed., January 21	**10:00am—12:00pm**

Coffee Breaks

Location: Kon Tiki Ballroom

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

Mon., January 19	**10:00am, 3:00pm**	
Tue., January 20	**10:00am, 3:00pm**	
Wed., January 21	**10:00am, 3:00pm**	
Thurs., January 22	**10:00am, 3:00pm**	**(Kon Tiki Foyer)**

CTS Tutorials

Location: Boardroom East/West

Sunday, January 18 **9:00AM-3:00PM**

Open to all WMC'04 Conference attendees

Exhibitor Reception

Location: Kon Tiki Ballroom

Mon., January 19 **6:00pm—7:30pm**

Sponsored by CAE Electronics Ltd.

Speaker's Breakfast

Location: Multi-Purpose Room

Mon., January 19	**7:00am—8:00am**
Tue., January 20	**7:00am—8:00am**
Wed., January 21	**7:00am—8:00am**
Thurs., January 22	**7:00am—8:00am**

Breakfast is served for each speaker **on the morning of his/her presentation.** Presenters meet with Track and Session Chairmen at designated tables to discuss presentations of the day. Admittance with Breakfast ticket only.

WMC 2004 General Session

Location: Aviary Ballroom

Mon., January 19 **8:30am — 10:00am**

WMC 2004 Keynote Address. The speaker is Kirstie Bellman, Aerospace Corporation, USA. See page 7 for more details.

WMC 2004 Luncheon

Location: Rousseau Center

Tue., January 20 **12:00pm—1:30pm**

Sponsored by The Society for Modeling and Simulation International

The speaker is Geoffrey Charles Fox, Indiana University, USA. See page 8 for more details.

Meetings

SCS Executive Committee Meeting

Sun., January 18 9:00am — 5:00pm Boardroom (#1457)

A meeting of the SCS Executive Committee where an administrative review of SCS is conducted. All members of the Executive Committee are expected to attend, and members of the Board of Directors are welcome to observe.

WMC 2004 Preconference Meeting

Sun., January 18 4:00pm — 5:00pm Rousseau East/West

All with a current role in organizing the 2004 WMC should plan to attend.

SCS Publications Board Meeting

Mon., January 19 1:30pm — 3:00pm Boardroom (#1457)

A meeting of the SCS Publications Board to discuss current and future publications of The Society for Modeling and Simulation International.

SCS Membership Board Meeting

Mon., January 19 3:30pm — 5:00pm Boardroom (#1457)

A meeting with the SCS Vice President of Membership and the Membership Board of The Society for Modeling and Simulation International, to discuss improving the membership benefits of SCS.

SCS Conference Board Meeting

Tues., January 20 10:30am — 12:00pm Boardroom (#1457)

A meeting of the SCS Vice President of Conferences and the Conference Board to discuss future venues for SCS conferences, growth in participation, and conference programming.

SCS Nominating Committee Meeting

Tues., January 20 1:30pm — 3:00pm Boardroom (#1457)

A Meeting of the SCS Nominating Committee to review and accept candidates for the 2004 Board of Directors Election.

WMC 2005 Conference Committee Meeting

Tues., January 20 5:00pm — 6:00pm In Meeting Rooms

Individual conference program committees meet in their respective meeting rooms to plan and prepare technical program development for WMC 2005.

WMC 2005 Planning Committee Meeting

Wed., January 21 12:00pm — 1:30pm Multi-Purpose Room

The WMC Organizing Committee and the SCS Vice President of Conferences will meet to plan for the WMC 2005. Those with a current or future role in organizing the program should attend to discuss specific plans for January 2005 in New Orleans, LA.

SCS Senior VP Meeting

Wed., January 21 10:30am — 12:00pm Boardroom (#1457)

A meeting with the Senior Vice President of SCS where analysis of societal relationships and strategic planning will be discussed.

SCS Western Regional Meeting

Wed., January 21 3:30pm — 5:00pm Rousseau West

All SCS members living in the Western United States are invited to attend and discuss the membership and meeting activities within the region.

CAE - POWER SIMULATION

CONTACT: Ross Randle

8585 Cote De Liesse
Saint Laurent, Quebec, HGT 1G6
Canada
Tel: 514-341-6780 • Fax: 514-734-5657
Email: Ross Randle@cae.com

Product Description:
CAE has been developing power plant simulators for three decades. These simulators reproduce the physical and environmental properties of the plant control room and function operationally in precisely the same manner as the actual plant being simulated. CAE also provides simulator upgrades and retrofit services.

CAE has pioneered many of the principal advances in simulator design and functionality. It is this desire to create value through innovation that has led to industry-wide recognition of CAE's cutting-edge simulator technologies based on ROSE - CAE's real-time component-based simulation environment.

However, utilities turn to CAE for more than its long service record and technology leadership. From conception to completion, and for the total life cycle of the project, CAE's customer services and response augment the high degree of system reliability that is expected of CAE simulators.

In open competition, customers constantly select CAE when they are seeking a balanced solution i.e. technical superiority and value for money. CAE is well established in the power sector and is always ready to address your simulation needs.

SIMSCI-ESSCOR/INVENSYS

CONTACT: Robert Richard

33 Commercial Street
Foxboro, MA 02035
Tel: 508-549-2607 • Fax: 508-549-4469

SimSci-Esscor will be featuring the following products:
Generic Drum Unit Operator Training Simulator - Combines a single-box solution high-fidelity dynamic simulation drum with full DCS-style operator interface unit and a complete training program that represents a lifetime of operations experience.

Operator Project Delivery and Services (OTS) - An industrial-strength, high-fidelity, dynamic plant operator training solution that insures capable, expert hands and minds at your plants controls. SimSci-Esscor's OTS solutions combine proven, superior simulation technology with years of practical experience in creating high-fidelity operator training simulators.

BALL AEROSPACE

CONTACT: Rosalee Emory

2875 Presidential Drive
Fairborn, OH 45324
Tel: 937-320-6005 • Fax: 937-320-6945
Email: Remory@ball.com

POWER PLANT SIMULATORS

CONTACT: Vladimir Rubaskin

15 Semjonovsky Plr.
Moscow, 107023
Russia
Tel: 095-360-4777 • FAX: 095-360-0926
Email: ppsa@edunet.ru

Product Description:
Demonstrating simulators for a 200MW oil fired drum boiler unit, for a 250MW supercritical coal fired boiler unit, and a combined circle gas-steam unit.

POWERGEN - POWER TECHNOLOGY

CONTACT Gary Rowe

Power Technology Centre, Ratcliffe on Soar
Nottingham, NG11 2EE
United Kingdom
Tel: +44- O- 115-936-2301 • Fax: +44- 0- 115 936-2363
Email gary.rowe@powertech.co.uk

RAM LABORATORIES INC.

CONTACT: Yvonne Rocco

10525 Vista Sorrento Parkway, Suite 220
San Diego, CA 92121
Tel: 858-677-9207 • Fax: 858-677-9215
Email YRocco@ramlabs.com

Product Description:
RAM Laboratories provides modeling, simulation and analysis services and technologies to the Department of Defense and commercial markets. Key focus areas include parallel and distributed computing, simulation systems development, mixed fidelity simulation, artificial intelligence and intelligent agents, and application interoperability. RAM Laboratories technologies include SPEEDES development and integration, an open source simulation framework; RAM SimEngine, a commercial framework supporting parallel and distributed applications; and MRMAide, a semi-automated model integration tool fro mixed fidelity simulation.

DATA SYSTEMS & SOLUTIONS (DS&S)

CONTACT: Vicki Shearer (DS&S); Kim (Eastern Exhibits; tel #410-694-9760)

7340 Executive Way, Suite A
Frederick, MD 21704
Tel: 301-644-2504 • Fax: 301-682-8104
Email: shearerv@ds-s.com

SimPort

SimPort is the complete object oriented real-time simulation environment. SimPort includes modeling tools, and Instructor Station, Real-Time Executive, Panel Graphics emulation, and a powerful Graphical Engineering Editor to allow you to meet your simulation needs far into the future.

RELAP5 R/T

RELAP5 R/T is a very high fidelity real-time model for diverse applications ranging from nuclear reactor thermal hydraulics to complex feedwater systems. Embedded in RELAP5 R/T is the Nodal Neutronics Kinetics Module (NNKM), a 3D engineering grade neutronics model.

SAIC

CONTACT: Mary John

4031 Colonel Glenn Highway
Dayton, OH 45432
Tel: 937-431-2310 • Fax: 937-431-4496
Email: mary.john@saic.com

Product Description:
1) Automated Validation System (AVS) - A PC-based system for testing complex embedded software systems. Includes real-time simulation, test automation, and multiple hardware interfaces to monitor/control/stimulate embedded systems under test.
2) Instant Private Networking based on SAIC's SD-Link patent-pending technology. Enables secure communication between computers located behind different firewalls without any modifications to the firewalls or network infrastructure.
3) Wearable Computers - demonstrates a fully capable computer that can be worn fro mobile/remote computing.

TRAX CORPORATION

CONTACT: Diane Holt

107 Vista Centre Drive
Forest, VA 24551
Tel: 434-385-7250 • Fax: 434-385-8233

Product Description:
TRAX provides a full range of high-fidelity process simulators, dynamic simulation services, ProTRAX simulation software, a suite of training services, control system design and tuning, and a complete line of SCR-related services.

Keynote Speaker

Monday 8:30am–10:00am Aviary Ballroom

Kirstie L. Bellman, Ph.D.
Aerospace Corporation, USA

"Self-Conscious Modeling"

Self-conscious modeling is one of the 21st century challenges. Over the next century, a large diversity of models will underlie computer-based support for most of our critical human functions, including education, commerce, medicine, science, and defense systems. Such will require "self-conscious modeling" in two senses. The first emphasizes the need to raise our awareness of the features and the limitations underlying the representations and methods we use to build our models and simulations. We will discuss the progress in developing methods to explicitly reason about the extent to which a representation or method appropriately matches the requirements of a modeling problem.

Once we have the methods to match representations to appropriate problems and to explicitly analyze and compare representations, we then can introduce the second sense of self-consciousness, which is to allow the modeling systems to use such methods themselves. The ability of a system to reason about its own abilities is part of a family of adaptive capabilities known as computational reflection. We will briefly describe our work in reflective architectures as one example of implementing computationally reflective systems.

Biography:

Dr. Kirstie L. Bellman returned to the Aerospace Corporation after four years at DARPA to start up a new bi-coastal research and development center, called the Aerospace Integration Sciences Center (AISC). The center serves as a research and development capability for a number of DoD and government agencies. AISC's focus is on the development of advanced system and model integration methods, new analytic techniques, and evaluation tools for assessing the impacts of new technologies. Upon completion of her term at DARPA as a Program Manager for the Domain-Specific Software Architectures (DSSA) program, Prototech (rapid prototyping technology), projects in the Formal Foundations program, the large Computer-Aided Education and Training Initiative (CAETI), and several TRP programs, she received an award from the Office of the Secretary of Defense for excellence in her programs. During her years at DARPA, she had the honor of working with Dr. Anita Jones, then DDR&E at OSD, with the Office of Science and Technology Policy in the White House, and a wide range of other government agencies.

Dr. Bellman has over thirty-five years of academic, industrial, and consulting experience in both laboratory research and the development of models and information architectures for large military and government programs. Her published research spans a wide range of topics in Cognitive Science, Neuroscience, and Computer Science. In addition to playing a leading role in the development of programs in the error analysis and evaluation of Artificial Intelligence programs, her group did internationally recognized research in conceptual design environments, software integration and architectures, and 'enterprise evaluation'. Fifteen years ago, she started the VEHICLES project, an environment for the conceptual design of space systems that incorporates both conventional and artificial intelligence methods. Ten years ago, with Dr. Landauer, she started the Wrappings approach to system integration. Eight years ago, with Dr. Landauer and others, she started extending the concept of Virtual Worlds to education, business and research environments. Her recent work focuses on the use of domain specific languages and formally based architectural description languages to design and analyze information architectures. In this work, she has also been developing methods for modeling organizational as well as technical aspects of complex systems. With a number of academic partners, she is also developing new mathematical approaches to the analysis of Virtual Worlds containing collaborating humans, artificial agents, and heterogeneous representations, models and processing tools. Lastly she has been working on *reflective architectures* that use models of themselves to manage their own resources and to reason about appropriate behavior. Recently with both national and international partners, she has been applying the above experience and methods to theoretical work and experiments on emotional agents, cybermedicine applications, bio-computation, and "biologically-inspired" architectures and operating systems. Besides her active research and management efforts, Dr. Bellman gives many invited talks every year and is a popular lecturer.

Luncheon Speaker

Tuesday 12:00pm–1:30pm Rousseau Center

Geoffrey Charles Fox
Indiana University

We will discuss some features and trends in simulation today. Most very large scale simulations on parallel machines are using technology (such as MPI) which is not substantially advanced over the last twenty years. Attempts to produce more advanced programming models have been largely unsuccessful — we ask and try to answer why?While the debate between vector and commodity clusters still rages, Grids enable linkage of resources around the globe and allows real-time integration of a data deluge with simulations. This is being driven by new applications that could be more amenable to new approaches. Where will this lead?

Biography:

Fox received a Ph.D. in Theoretical Physics from Cambridge University **a**nd is now professor of Computer Science, Informatics, and Physics at Indiana University. He is director of the Community Grids Laboratory of the Pervasive Technology Laboratories at Indiana University. He previously held positions at Caltech, Syracuse University and Florida State University.

Fox has worked in a variety of applied computer science fields with his work on computational physics evolving into contributions to parallel computing initially involving the hypercube architecture. He has worked on the computing issues in several application areas – currently focusing on Earthquake Science. Over the last four years, a major activity has been the use of Object Web technologies to build collaboration systems and their application in an integrated approach to synchronous and asynchronous distance education. He has led activities to develop prototype high performance Java and Fortran compilers and their runtime support. His research group has pioneered use of distributed object and service architectures for both collaboration and distributed computing. In particular the Gateway computational portal was one of the earliest systems to integrate object and grid technologies. The GlobalMMCS project is developing the Web service collaboration model using a Grid messaging system NaradaBrokering. He helped set up the Java Grande forum to encourage use of Java in large-scale computations. Fox co-chairs the Grid Computing Environment (GCE) working group of the Grid Forum and is developing the portlet approach to computational portals.

He is the main editor of the journal *Concurrency & Computation: Practice&Experience* and recently published a book: *Grid Computing: Making the Global Infrastructure a Reality* co-edited with Fran Berman and Tony Hey.

International Conference On Health Sciences Simulation

General Co-Chair: James G. Anderson, *Purdue University, USA*
General Co-Chair: Meyer Katzper, *FDA/CDER, USA*

MONDAY, JANUARY 19, 2004

MONDAY 10:30AM-12:00 PM ROUSSEAU WEST

HEALTH CARE POLICY

Chair: Godefridus G. van Merode, Maastricht University, The Netherlands

Price, Expenditure and Technology Dynamics in U.S. Health Care, 1950-1999
George W. Pasdirtz, *University of Wisconsin-Madison, USA*

Use of Information Technology by Primary Care Physicians
James G. Anderson, *Purdue University, USA*
Marilyn M. Anderson, *Anderson Consulting, USA*

A Modern Simulation Approach for Pharmaceutical Portfolio Management
Kirk Solo, Mark Paich, *SimNexus LLC, USA*

MONDAY 1:30PM-3:00PM ROUSSEAU WEST

HEALTH SERVICES I

Chair: George W. Pasdirtz, University of Wisconsin, USA

Constructing New Hospitals: The Effect of Innovative Care Organizations
Frits (G.G.) van Merode, Ruund Verreussel,
Koos (O.J.) Vrieze, Stef Zeemering,
Maastricht University, The Netherlands

Changes in Cardiovascular Processes: The Effects of Product Lines by Simulation
Pascal Gorissen, Siebren Groothuis, Michael Jacobs,
Peter Kitslaar, Frits van Merode
Maastricht University, The Netherlands

Introduction of Product Lines in a Hospital: The Use of Simulation
Siebren Groothuis,Nicole M.H.M. Maraite,
Pascal L.M.E.M. Gorissen, Jan L.M. Stappers,
Michael J.H.M. Jacobs, Godefridus G. van Merode
Maastricht University, The Netherlands

MONDAY 3:30PM-5:00PM ROUSSEAU WEST

Tutorial: AnyLogic Tutorial and Demonstration
Kirk Solo, SimNexus LLC

TUESDAY, JANUARY 20, 2004

TUESDAY 8:30AM-10:00AM ROUSSEAU WEST

HEALTH SERVICES II

Chair: Marion Rauner, University of Vienna, Austria

Simulation-Based Real-Time Resource Allocation for Hospital Workflows
Armand Prieditis, Mukesh Dalal, Andrew Arcilla
Look Ahead Decisions Inc., USA

Introducing Discrete Event Simulation for Decision Support in the Swedish Health Care System
Matias Urenda Moris, Patric Eriksson, Leo de Vin
Centre for Intelligent Automation, University of Skovde, Sweden

Simulation Modeling of the Scheduling Management of an Operating Theater
Syi Su, Chung-Liang Shih, Chieh-Yow Chaing Lin,
Yi-Chun Lin, Fanny Tan
National Taiwan University, Taiwan

Health Sciences

Tuesday 10:30am-11:30am Rousseau West

Health Services III

Chair: Siebren Groothuis, Maastricht University, The Netherlands

Using a Markov Model to Evaluate the Cost-Effectivness of Diabetic Foot Prevention Strategies in Austria
Marion S. Rauner, Kurt Heidenberger, Eva-Maria Pesendorfer
University of Vienna, Austria

Using Computer Simulation to Estimate the Ambulance Requirements and Transport Modeling in Mass-Causality Disasters
Chung-Liang Shih, Syi Su, *National Taiwan University, Taiwan*

A Blood Pressure Reduction Study with a Missing Variable
William C. Conley, *University of Wisconsin-Green Bay, USA*

Tuesday 11:30am-12:00noon Rousseau West

Protein Conformations

Chair: James L. Hargrove, University of Georgia, USA

Simulation of Conformations of the Polypeptide Chains with Modified Monte Carlo Method
Sylwester Warecki, *Motorola SPS, USA*
Lech Znamirowski, *Silesian University of Technology, Poland*

Tuesday 1:30pm-3:00pm Rousseau West

Genetic Processes

Chair: Marcelo Guarini, Catholic University of Chile, Chile

Nutritional Bioinformatics and Modeling of Human Gene Expression for the HDL-Cholesterol Phenotype
James L. Hargrove, D. K. Hartle, Phillip Greenspan
University of Georgia, USA

Automatic Learning of Fuzzy Partitions in Human Central Nervous System Modeling Using Genetic Algorithms
Angela Nebot, Jesus Acosta, Pedro Villar, Joseph M. Fuertes
Universitat Politecnica de Catalunya, Spain

Tuesday 3:30pm-5:00pm Rousseau West

Tutorial: The Use of Bioinformatics in Modeling Human Gene Expression: An Example Based on the PON1 Gene and HDL Cholesterol
James L. Hargrove, Diane K. Hartle, Phillip Greenspan
University of Georgia, USA

WEDNESDAY, JANUARY 21, 2004

WEDNESDAY 8:30AM-10:00AM ROUSSEAU WEST

PHARMACOMETRIC APPLICATIONS

Chair: J. Mailen Kootsey, Loma Linda University, USA

Baroreceptor Dynamics
Meyer Katzper, *FDA, USA*

Dynamics of Bisphenol A Distribution in the Endocrine Pathway
Joseph Hutter, H.M. Luu, C.S. Kim, *FDA, USA*

The Ultradian Pulsatility and Nonlinmear Effects in the Hypothalamic-Pituitart-Adrenal Axis
Vadim Kyrylov, Liudmila Severyanova, Anatoly Zhiliba
Simon Fraser University, Surrey, BC, Canada

WEDNESDAY 10:30AM-12:00 NOON ROUSSEAU WEST

MEDICAL APPLICATIONS

Chair: James Hargrove, University of Georgia, USA

Using Heart MRI Sequences to Calibrate and Validate a Model Based Left Ventricular Estimation Method
Marcelo Guarini, *Catholic Universitry of Chile, Chile*

A Voxel Approach to Haptically Rendering a Virtual Incision
Gerald Pitts, Ryan Scholz
Trinity University, USA

NLX: Rapid Construction of Interactive Simulations for the Web
J. Mailen Kootsey, Grant McAuley, Daniel Siriphongs
Loma Linda University, USA

WEDNESDAY 1:30PM-3:00PM ROUSSEAU WEST

SIMULATION METHODOLOGIES

Meyer Katzper, FDA, USA

Open Session
This session will be an open session for practitioners considering a variety of approaches dealing with the complexity of simulation in the health sciences. Alternative ways of thinking about problem formation will be discussed using fuzzy inductive reasoning, Bayesian algorithms, and the use of the Web for simulation communication.

Education

International Conference on Simulation in Education

General Chair: Arnold Pears, *Uppsala University*
Program Chair: Chell Roberts, *Arizona State University*

Monday, January 19, 2004

Monday 1:30pm-1:40pm Rousseau East

Welcome address by Arnold Pears and Chell Roberts

Monday 1:40pm-3:00pm Rousseau East

Session 1: Using Simulation in Teaching

Chair: Chell Roberts, Arizona State University, U.S.A.

Berserkr: a Beowulf Cluster Emulator for Teaching Parallel Programming
Micaela Spigarolo, Renzo Davoli
University of Bologna, Italy

Teaching Software Engineering Using Simulation Games
Emily Oh Navarro, Alex Baker, Andre van der Hoek
University of California, Irvine, USA

Process Simulators in the ChE Curriculum
Mariano J Savelski, Stephanie Farrell, Kevin Dahm, Robert Hesketh
Rowan University, USA

Monday 3:30pm-5:00pm Rousseau East

Session 2: Teaching and Using Simulation

Chair: Ralph Huntsinger, California State University, Chico, USA

Teaching Computer Simulation in an Online, Collaborative Environment: A Case Study
Vadim Kyrylov, John Nesbit
Simon Fraser University, Canada

OpenIPLab: An Open Platform For Computer Network Education And Collaboration
Pekka Hedqvist, Stefan Lindström
Uppsala University, Sweden

A Proposed Model for an Undergraduate Engineering Program in Modeling and Simulation
Chell Roberts, *Arizona State University, Engineering, USA*
Sumit Ghosh, *Stevens Institute of Technology, USA*

Tuesday, January 20, 2004

Tuesday 8:30am-10:00am Rousseau East

Session 3:

Panel Session: "The Role of the SCS in World Simulation Education".
Participants: Sumit Ghosh, Arnold Pears, Chell Roberts, Bernard Zeigler

Tuesday 10:30am-12:00pm Rousseau East

Session 4: Educational Issues

Chair: Renzo Davoli, University of Bologna, Italy

Using OSim Simulations to Better Understand Computer Networks
Arnold Pears, *Uppsala University, Sweden*

Impact of Integrating Simulation Practices in Undergraduate Engineering Education with Particular Reference to a Course in a Technical University in Malaysia
Abu M. Wahidullah, Marizan Sulaiman
Kolej Universiti Teknikal Kerbangsaan, Malaysia

SimEd: A New Initiative in Simulation Education
Roy E. Crosbie, Ralph C. Huntsinger
California State University, Chico, USA
Stanislaw Raczynski, *Universidad Panamericana, Mexico*

The Fifth International Symposium on Collaborative Technologies and Systems

General Co-Chair: Waleed W. Smari, *University of Dayton*
General Co-Chair: William McQuay, *Air Force Research Laboratory*

CTS Tutorials

All CTS Tutorials are open to all WMC'04 Conference Attendees.

Sunday, January 18, 2004

Sunday 9:00am-12:15pm Boardroom East/West

CTS Tutorial I

Session Chair: Michael Cox, Wright State University, USA

Mobile/Wireless Networks, Internet, and Multimedia: Enabling Technologies for Collaborative Systems
S.R. Subramanya, *University of Missouri at Rolla, USA*

Sunday 10:45am-12:15pm Boardroom East/West

CTS Tutorial II

Session Chair: Henry Hexmoor, University of Arkansas, USA

What's the Use? Methods for Studying the Human Use of Collaborative Systems
Diane J. Schiano, *Stanford, USA*

Sunday 1:30pm-3:00pm Boardroom East/West

CTS Tutorial III

Session Chair: Dr. Kirk Weigand, IFSD/AFRL, USA

The Collaboration Market and Technologies
David Coleman, *Collaborative Strategies, USA*

Monday, January 19, 2004

Monday 8:30am-9:00am Aviary Ballroom

WMC Welcome and Opening Remarks

Monday 9:00am-10:00am Aviary Ballroom

WMC Keynote Speech: "Self-Conscious Modeling"

Kirstie L. Bellman, *Aerospace Corporation, USA*

Monday 10:30am-12:00noon Cockatoo

CTS Keynote Speech I

Session Chair: William McQuay, IFSD–AFRL, USA

Collaborative Dynabooks: A Research Agemda on Learning With Multimedia
Mark Guzdial, *Georgia Institute of Technology, USA*

Monday 1:30pm - 2:15pm Cockatoo

Session 1: Infrastructure for Collaborative Systems and Applications

Session Chair: Mads Nygard, NUST, Norway

Design and Implementation of Audio/Video Collaboration System Based on Publish/Subscribe Event Middleware
Geoffrey C. Fox, Wenjun Wu, Ahmet Uyar, and Hasan Bulut
Indiana University and Syracuse University, USA

Merging Contributions in Cooperative Creation of 3D-Persons
Faysal Abouzaid, Omar Cherkaoui, Sabri Boutemedjet, Gilles Lemire, and Gilles Gauthier
Université du Québec à Montréal, Canada

MONDAY 2:15PM-3:00PM COCKATOO

SESSION 2: COLLABORATIVE VIRTUAL ENVIRONMENTS

Session Chair: Dr. Boldizsar Bencsath, Budapest University of Technology, Hungary

DEVISE: A Collaborative Virtual Environment for Integrated Concurrent Engineering
Kenneth J. Witt, Rebecca Giorcelli, Marjorie Darrah, Barry Ives, and Russell Peak, *Institute for Scientific Research, Inc., WV and Georgia Institute of Technology, USA*

Collaborative Technologies in the Virtual Testbed Aerospace Operations Center (VT-AOC)
Tom Broadstock and Bradley Dunaway
SAIC, Ohio, USA

MONDAY 3:30PM-4:30PM COCKATOO

SESSION 3: SECURITY AND COLLABORATION (SS)

Session Chairs: Christian Toiinard ENSI-Bourges, France
Vincent Glaume, CEA/DIF, France

Team Access Control based on Organization Roles
Fahad T. Aoltaiby, *George Mason University, USA*

Protection Against DDoS Attacks Based on Traffic Level Measurements
Boldizar Bencsath and Istvan Vajda
Budapest University of Technology and Economics, Hungary

Trusted Linux Systems and Application to Cluster Architecture
Mathieu Blanc, *CEA/DIF, France*

MONDAY 4:30PM-5:30PM COCKATOO

SESSION 4: AGENT-BASED TECHNOLOGIES IN COLLABORATIVE SYSTEMS

Session Chair: Faysal Abouzaid, Universite du Quebec, Canada

Deception as a Means for Power Among Collaborative Agents
Derrick Ward and Henry Hexmoor
University of Arkansas, USA

Collaborative Document Recommendation in a CIS Framework
Clara Bighini and Antonella Carbonaro
University of Bologna, Italy

GTrans: An Application for Managing Mixed-Initiative Collaborative Planning During Emergency Response Situation
Trivikram Immaneni and Michael T. Cox
Wright State University, USA

MONDAY 5:30PM-6:00PM COCKATOO

SESSION 5: CTS DEMO I:

GlobalMMCS - Global Multimedia Collaboration
Session Chair: Stephen Thomas , AFRL, USA

TUESDAY, JANUARY 20, 2004

TUESDAY 8:30AM-10:00AM COCKATOO

CTS KEYNOTE SPEECH II

Session Chair: Azad M. Madni, Intelligent Systems Technologies, Inc., USA

The Future of Collaboration
David Coleman, *Collaborative Strategies, USA*

Collaborative Technologies

Tuesday 10:30am-12:00noon Cockatoo

Plenary Speech I

Session Chair: B. Chandrasekaran, Ohio State University, USA

Collaboration Systems Design: Lessons Learned and Challenges
Atul Prakash, *University of Michigan, USA*

Tuesday 2:00pm-3:00pm Cockatoo

Session 6: Knowledge Management in Collaborative Systems

Session Chair: Gordon K. Lee, San Diego State University, USA

Putting Users at the Center: Lessons for Knowledge Management from Knowledge-Based Systems Research
B. Chandrasekaran, *Ohio State University, USA*

Grid Enabled Knowledge Management Services
Jawed Siddiqi, Babak Akhgar, Mehrdad Naderi, Saadat M. Alhashmi
Sheffield Hallam University, United Kingdom

Using Knowledge Management to Improve Process Efficiency through Advanced Collaboration Technology
Gary A. Whitted , *Ball Aerospace & Technologies, Corp., Ohio, USA*

Tuesday 3:30pm-6:00pm Cockatoo

Session 7: Collaborative Robots

Session Chairs: Kuo-Chi Lin, University of Central Florida
Louis Chan, IFSD, USA

The Development of a Testbed for Evolutionary Learning Algorithms for Mobile Robotic Colonies
Gordon K. Lee, Amit Agarwal, Jay Kothari, Supriya Bhat,
Damion Gastelum, Thomas Jones
San Diego State University
Edward Grant, Andrew Nelson, *North Carolina State University*
Hong Kyu Lee, *Korea University of Technology and Education*
Stuart Rubin, *SPAWAR, USA*

Control of Collaborative Mobile Robots Subject to Nonholonomic Constraints
Chadwick A. Sylvester, Gloria J. Wiens, and Norman G. Fitz-Coy
University of Florida, USA

Social Reasoning and Collaboration among a Large Group of Robots
Henry Hexmoor and K. Madhava Krishna
University of Arkansas, USA

Behaviors of UAV in a Swarm
Kuo-Chi Lin, *University of Central Florida, USA*
Bill McQuay, *Air Force Research Laboratory, USA*

Towards Collaborative Robots for Infrastructure Security Applications
Yi Guo, *University of Central Florida, USA*
Lynne E. Parker, *University of Tennessee, USA*
Raj Madhavan,*NIST, USA*

Human and Robot Exploratory Teamwork
Ronald Provine, Steven Poltrock, James Troy and Michael Uschold
Boeing Company, Washington, USA

A collaborative Search and Engage Strategy for Multiple Mobile Robots with Local Communication in Large-scale Hostile Area
Xiaohui Cui, Rammohan K. Ragade, and Adel S. Elmaghraby
University of Louisville, USA

Tuesday 6:00pm - 6:30pm Cockatoo

Session 8: CTS DEMO II:

Collaboration Tools for Integrated Missile Warning Mission Rehearsal and Exercise

Session Chair: Mark Stephenson, SAIC, USA

Eric Loomis, *Ball Aerospace & Technologies Corp, USA*
John Friske, *Sytronics, Inc., USA*

WEDNESDAY, JANUARY 21, 2004

WEDNESDAY 8:30AM-10:00AM COCKATOO

SESSION 9: COLLABORATIVE SYSTEMS: RESEARCH AND DEVELOPMENT

Session Chair: Mr. Kenneth Allen, SAIC, USA

Collaboration Technology for Joint and Naval Applications: Past Progress and Future Directions
LorRaine T. Duffy and Marion G. Ceruti
Space and Naval Warfare Systems Center, California, USA

The Evolution Towards Intelligent Collaboration: A Reflective Meta-Level Approach to Media Space Design
Wayne Robbins, *Defence Research & Development, Canada*

Context-driven Collaboration During Mobile C2 Operations
Azad M. Madni and Carla M. Madni
Intelligent Systems Technology, Inc., California, USA

On-Line Collaborative Community
Mark M. Stephenson
Science Applications International Corporation (SAIC), Ohio, USA

WEDNESDAY 10:30AM-12:00NOON COCKATOO

SESSION 9: COLLABORATIVE SYSTEMS: RESEARCH AND DEVELOPMENT

Session Chair: Lorraine Duffy, SPAWAR, USA

Making Collaboration Work Even When You're Not! Saving Time and Money Through Advanced Collaboration
Bradley D. Mallare, Jason M. DeWeese, and Tom Collier
Ball Aerospace &Technologies Corp., Ohio, USA

Customization of Supply Chain Strategy: A Simulation and Collaborative Approach
S. K. Tsoi, C.F. Cheung, and W.B. Lee
The Hong Kong Polytechnic University, Hong Kong

Can You Accelerate Your Project Using Extreme Collaboration? A Model Based Analysis
John Chachere, John Kunz, and Raymond Levitt
Stanford University, USA

Collaborative Environments for Studies and Analysis
Stephen Thomas
Air Force Research Laboratory, WPAFB, Ohio, USA

WEDNESDAY 1:30PM-3:00PM COCKATOO

SESSION 11: E-DESIGN AND REALIZATION OF ENGINEERED PRODUCTS AND SYSTEMS (SS)

Session Chairs: Bart O. Nnaji, University of Pittsburg, USA

Enabling Electronic Commerce within the e-Design Paradigm
Raymond R. Hoare
University of Pittsburgh, USA

A Web-based Environment for Managing Product Knowledge
Akshaye Sikand and Janis Terpenny
University of Massachusetts - Amherst, USA

An Encapsulated Design Model for Efficient Information Flow in e-Design
Ming-En (Alex) Wang
University of Pittsburgh, USA

Scheduled Role - Based Distributed Data Access Control Model for Data Sharing in Collaborative Design
Yan Wang, Pamela N. Ajoku, and Bart O. Nnaji
University of Pittsburgh, USA

Wednesday 3:30pm-3:55pm Cockatoo

Session 11 Continued: e-Design and Realization of Engineered Products and Systems (SS)

Session Chairs: Bart O. Nnaji, University of Pittsburg, USA

EMMA: The Extensible Multimedia Applications Framework for Developing Collaborative, Streaming Multimedia Applications
Bentz Tozer, Dara Kusic, Amy Ridilla, and Raymond R. Hoare
University of Pittsburgh, USA

A Fuzzy Approach to Decision Making in Rapid Prototyping Benchmarking
Mani Mahesh, Y. S. Wong, J.Y.H. Fuh, and H.T. Loh
National University of Singapore, Singapore

Wednesday 4:00pm-5:30pm Cockatoo

CTS Panel Session

Collaborative Technology–Policy, Practice, & The Way Ahead

Moderator: Vance Saunders, Ball Aerospace & Technologies Corp., USA

Panelists: Paul Bailor, *Lockheed Martin, USA*
Vasco Drecun, *Collaborative Product Development Associates, LLC, USA*
Charles Nietubicz, *HPC Division, US Army Research Laboratory*
Virginia Williamson, *Air Force Program Executive Office, C3 Support Systems, USA*

Wednesday 5:30pm-6:00pm Cockatoo

Session 12: CTS DEMO III

Composing Executable Architectures in VSO

Session Chair: Gary Whitted, *Ball Aerospace & Technologies Corp., USA*
John Woodring, *Modasco, Inc., USA*

Thursday, January 22, 2004

Thursday 8:30am-9:15am Cockatoo

Session 13: Distance and Collaborative e-Learning

Composing Executable Architectures in VSO

Session Chair: Raymond R. Hoare, University of Pittsburgh, PA, USA

Multi Platform Low Bandwidth Remote Lecturing
Renzo Davoli, *University of Bologna, Italy*

A Case for a Collaborative Computing Tool for Image Processing
Jeffrey A. Shafer, Joseph T. Fieler, Shawn T. Nichols, Frank A. Scarpino, and John G. Weber
University of Dayton, USA

Thursday 9:15am-10:00am Cockatoo

Session 14: Web-Enabled Collaboration and Services

Session Chair: Renzo Davoli, University of Bologna, Italy

Architecture and Data Model of a WebDAV-based Collaborative System
Sunghun Kim, Kai Pan, Elias Sinderson, and E. James Whitehead, *Jr.*
University of California, Santa Cruz, USA

Integrating New Web/Java Technologies: Results from KnowledgeKineticsTM Version 4.0 Research and Development
Ty W. Hayden and Eric C. Loomis
Ball Aerospace & Technologies Corp., Ohio, USA

Thursday 10:30am-12:00noon Aviary Ballroom

Plenary Speech II

Session Chair: Marion Ceruti, SPAWAR, USA

Mixed-Initiative Computing
Michael T. Cox, *Wright State University, USA*

THURSDAY 1:30PM-2:15PM COCKATOO

SESSION 15: MOBILE COLLABORATIVE WORK (SS)

Session Chair: Heri Ramampiaro, Alf Inge Wang, Norweigian University of Science and Technology, Norway

Adaptive Consistency Management Support for Limited Capacity Devices in Ad-hoc Mobile Networks
Jim McGovern, Caspar Ryan
RMIT University, Australia

A Group Mobility Prediction Scheme with Call Admission Control in Wireless Cellular Networks
John Tsiligaridis, Raj Acharya
State University of New York at Buffalo, USA

THURSDAY 2:15PM-3:00PM COCKATOO

SESSION 16: COLLABORATIVE NETWORKING INFRASTRUCTURE (SS)

Session Chair: Junaid A. Zubari, State University of New York at Fredonia, USA

Challenges and Issues in Global Collaborative Networking
Junaid Ahmed Zubairi, *State University of New York-Fredonia, USA*

Run-Time Monitoring and Dynamic Binding of Web Services
Zafar U. Singhera, *ZAF Training and Consulting, California, USA*

THURSDAY 3:30PM-4:30PM COCKATOO

SESSION 17: INDUSTRIAL TRACK

Session Chair: Dr. John Woodring, Modasco Inc., USA

Enhancing Complex System Management Through Collaborative Technologies
Bruce Denner, David Martin, Eric Loomis, and Jim Nagy
Windmill International Inc., Ball Aerospace & Technologies Corp., and AFRL/IFTD, USA

Performance Modeling of Collaborative ETL Processing
Tsae-Feng Yu
Oracle Corporation, New Hampshire, USA

The SPEEDES CASS Motion Library
Craig Lammers, Kristy Mayo, Jeffrey Steinman
RAM Laboratories, Inc., California, USA

Thursday 4:30pm-5:30pm Cockatoo

Session 18: Work-In-Progress

Session Chair: Wayne Robbins, Defence Research and Development, Canada

The JBISim Project: Using Detailed Analytical Simulation and Model Abstraction to Investigate and Evaluate Joint Battlespace Infosphere (JBI) Support Technologies

David Green, Jerome Reaper, Joel Dallaire
Science Applications International Corporation (SAIC), USA

Development of a Distributive Collaborative Decision Support Environment for Affordability Assessments

Ronald D. Shroder, *Frontier Technology. Inc., USA*

A Computer Simulation Experience to Develop and Assess Systems Based and Practice Based Learning and Improvement Competencies in Primary Care Residents

Durwin S. Talon, Deanna Willis
IUPUI, USA

Thursday 5:30pm-6:00pm Cockatoo

Session 19: CTS Demo IV:

Improving Process Execution through Collaboration Decision Support and Knowledge Management Systems

Session Chair: Raymond Hoare, University of Pittsburgh, USA

Gary A. Whitted, Bradley D. Mallare
Ball Aerospace & Technologies, USA

Nuclear Power Plants and Systems

Co-Chair: Scott Halverson, *AmerenUE*
Co-Chair: Mac McDade, *Carolina Power and Light*

Monday, January 19, 2004

Monday 8:30am-9:00am Aviary Ballroom
WMC Welcome and Opening Remarks

Monday 9:00am-10:00am Aviary Ballroom
WMC Keynote Speech:
"Self-Conscious Modeling"
Kirstie L. Bellman, *Aerospace Corporation, USA*

Monday 10:30 am-12:00noon Toucan
Session 1: Simulation Concepts
Session Chairman: Rick Murray

Simulator and Simulation Trends
Scott Halverson, *AmerenUE, USA*

Isis(tm): The latest in Instructor Station User Friendliness
Christian Paquette, Annick Rouleau, *CAE, Canada*

Simulation Technology Overview
Jody Ryan, *RNI Technologies, USA*

Monday 1:00pm-1:45pm Toucan
Session 2A: Simulator Vendor Presentations
Session Chairman: Sam Ashy
DS&S Presentation

Monday 2:00pm-2:45pm Toucan
Session 2B: Simulator Vendor Presentations
Session Chairman: Michael Chatlani
CAE Presentation

Monday 3:00pm-3:45pm Toucan
Session 2C: Simulator Vendor Presentations
Session Chairmen: Steven Carr, Powergen
Solutions for Siemens Teleperm-XP for Nuclear Simulators
Steven Carr, Alan Brookes, *Powergen, UK*
Joan Monte, *Siemens Westinghouse Power Corporation, USA*

Tuesday, January 20, 2004

Tuesday 8:30am-10:00am Toucan
Session 3: Simulator Project updates
Session Chairman: Graham Hancock

Project Managing Your Simulator DCS Upgrades
Steven Carr, *Powergen, UK*

SAIPMS Process Computer Replacement at the Fermi 2 Simulator
Joel Lavelline, *Detroit Energy, USA*

DCS Translation Tool: Faster and Better than Ever
Tony El-Chakieh, *Claude Vincent, CAE, Canada*

Tuesday 10:30am-12:00pm Toucan

Session 4: Simulation models, benchmarking and integration

Session Chairman: Barney Panfil

Replacing the Indian Point 3 Electrical Distribution System Models Using XtremeElectric
John Stone, *RNI Technologies*
Wayne Robinson, *Entergy*

Benchmarking the Windows-Based Comanche Peak Relap5 Simulator
Carlos Navas, *Comanche Peak*
Dave W. Hiltbrand, *P.E., DS&S*

Integrating RELAP5-R/T and SIMULATE-3R on Forsmark 1 BWR Simulator
Jerry L. Judd, *Data Systems & Solutions*
Jeffrey A. Borkowski, *Studsvik Scandpower*

Tuesday 1:30pm-3:00pm Toucan

Session 5: Simulator Upgrades and Updates

Session Chairman: Scott Halverson, AmerenUE, USA

San Onofre 2/3 Simulator: The move from Unix to Windows
Vincent Gagnon, *SCE*
Christian Paquette, Cerif Desouky, *CAE*

The Davis-Besse THOR-S3R and THOR-BOP Major Model Upgrade
Dave O'Farrel, *RNI Technologies*
Kim Stiger, Larry Konopka, *FirstEnergy*

VVER-440 full scope simulators upgrades
Jan BARTAK, Benoit FALLON, *Corys TESS, France*

Tuesday 3:30pm-5:00pm Toucan

Session 6: Simulator Related Topics

Session Chairman: Barney Panfil

SUN-RAH: University Simulation of a BWR Nuclear Power Plant for Graduate and Undergraduate Course Support.
Jaime B. Morales, *Universidad Nacional Autónoma de México*

High Temperature Gas Cooled Reactor
Shaojie Luo, *Tsinghua University, China*

Distributed Control System LAB Setup
Scott Halverson, *AmerenUE, USA*

Wednesday, January 21, 2004

Wednesday 8:30am-10:00am Toucan

Session 7: Panel ANS-3.5 Survey and Standard Update

Session Chairman: Carl Golightly
Jim Florence, *ANSI-3.5 Working Group*

Wednesday 10:30am-12:00pm Toucan

Session 8: Panel Regulation Changes

Session Chairman: Carl Golightly
Larry Vick, *NRC 10CFR55.46, Reg Guide 1.149*

Wednesday 1:30pm-5:00pm Toucan
Session 9: MANTG Simulator Meeting Workshop/Workshop
Session Chairman: MANTG Chairman
Open Agenda

Wednesday 1:30pm-5:00pm Rousseau East
Session 10: MNTA Simulator Meeting/Workshop
Session Chairman: MNTA Chairman
Open Agenda

Wednesday 1:30pm-5:00pm Boardroom West
Session 11: SSNTA Meeting
Session Chairman: SSNTA Chairman
Open Agenda

Wednesday 1:30pm-5:00pm Rousseau Center
Session 12A: Westrain Simulator Meeting/Workshop
Session Chairman: SSNTA Chairman
Open Agenda

Wednesday 1:30pm-5:00pm Rousseau Center
Session 12B: STARS Meeting/Workshop
Session Chairman: Scott Halverson, AmerenUE, USA
Immediately follows the Westrain workshop

Thursday, January 22, 2004

Thursday 8:30am-10:00am Toucan
Session 13: USUG Annual Meeting
Session Chairman: Scott Halverson, AmerenUE, USA

Thursday 10:30pm-12:00noon Toucan
Session 14: USUG Panel Discussion/Region Reports
Session Chairman: Region 1 & 2 Representatives
Panel Topic: Scenario Based Testing Implementations Documentation Requirements

Thursday 1:30pm-2:30pm Toucan
Session 15: USUG Panel Discussion/Region Reports
Session Chairman: Region 3 & 4 Representatives
Panel Topic: IP 71111.11 Inspections Training Needs Assessments Core Cycle Upgrades

Thursday 2:45pm-3:45pm Toucan
Session 16: USUG Panel Discussion -International
Session Chairman: Region Representative
Panel Topic: Inputs from international members

Thursday 4:00pm-5:00pm Toucan
Session 17: USUG Current topics from Conference
Session Chairman: Scott Halverson, AmerenUE, USA
Scenario Based Testing, Third Party Proprietary Maintenance Agreements

Fossil Simulation and Training

Co-Chairs: Richard Pennington, *EPRI, USA*
Co-Chairs: Merrill Quintrell, *EPRI, USA*

MONDAY, JANUARY 19, 2004

MONDAY 8:30AM-10:00AM AVIARY BALLROOM

OPENING SESSION

MONDAY 10:30AM-11:15AM MACAW

Recent Trends in Control System Vendor Solutions for Simulator Applications
ESSCOR

MONDAY 11:15AM-12:00NOON MACAW

CAE's DCS Translation Tool: Faster and Better Than Ever
Tony El-Chakieh, Claude Vincent, CAE

MONDAY 1:30PM-4:15PM MACAW

VENDOR BREAKOUT SESSIONS

TUESDAY, JANUARY 20, 2004

TUESDAY 8:30AM-9:15AM MACAW

EEI Approach to Simulators and DCS Upgrades
Michael Balcerek, *Data System & Solutions, Frederick, MD*

TUESDAY 9:15AM-10:00 AM MACAW

Objective Simulation of Fossil Power Plants
Vladimir A. Rubashkin, *Power Plant Simulators, Russia*

TUESDAY 10:30AM-11:15AM MACAW

PPL Montana Simulators for Colstrip Unit 2 and Unit 3 Justified to Prevent Outage Extension Risk
ESSCOR

TUESDAY 11:15PM-12:00PM MACAW

TRAX Paper

TUESDAY 1:30PM-2:15PM MACAW

Investment Secured by Rehosting - A Project Report
Volker Niedorf, *Rheinmetall Defence Electronics GmbH, Germany*

TUESDAY 2:45PM-3:30PM MACAW

Intermountain Power Service Corportation Replaces Vintage Hard Pannel Simulator with New Design Based on SimSci-Esscor's SIM4ME Simulation Environment and ABB Control IT DCS System
ESSCOR

TUESDAY 3:30PM-4:15PM MACAW

On-Line Simulation Applications in Power Plant Safety Analysis and Pre-Warnings
Yih-Jung Yeh, *Arch Technology, Inc. Maryland, USA*

WEDNESDAY, JANUARY 21, 2004

WEDNESDAY 8:30AM - 11:15AM MACAW

Round Table

WEDNESDAY 11:15 - 12:00 MACAW

Tucson Electric Power - Springville Station Simulator is Basic Test Platform for Validation of Foxboro I/A DCS System
ESSCOR

Communication Networks and Distributed Systems Modeling and Simulation

General Chair: Taieb Znati
Program Chair: A. Bruce Mcdonald

MONDAY, JANUARY 19, 2004

MONDAY 8:30AM-9:00AM AVIARY BALLROOM

WMC WELCOME AND OPENING REMARKS

MONDAY 9:00AM-10:00AM AVIARY BALLROOM

WMC KEYNOTE SPEECH:
"SELF-CONSCIOUS MODELING"

Kirstie L. Bellman, *Aerospace Corporation, USA*

MONDAY 10:30AM–12:00PM BOARD EAST/WEST

SESSION 1: MODELING AND ANALYSIS OF DISTRIBUTED SYSTEMS

Modeling and Performance Evaluation of Agent and Client/Server-Based Information Retrieval Systems – A Case Study
Yu Jiao and Ali R. Hurson, *The Pennsylvania State University, USA*

Analyzing Efficiency and Resilience of Peer-to-Peer Models
Wei Yu, *Texas A&M University, USA*

Evaluation of Mobility-Aware Personalized Services in Wireless Broadband Hotspots
Ian Herwono , *Aachen University Kopernikusstr, Germany*
Joachim Sachs and Ralf Keller *Ericsson Eurolab, Germany*

MONDAY 1:30PM–3:00PM BOARD EAST/WEST

SESSION 2: MODELS FOR PERVASIVE COMPUTING

A System Architecture for Pervasive Computing
Bakhshinder Singh, Harloveleen Kaur, Guru Nanak
Dev Engineering College, India

An Holistic Approach for Pervasive Computing Environments
Sergio Maffioletti, Soraya Kouadris M. and Beat Hirsbrunner
University of Fribourg, Switzerland

A JINI Based Framework for Nomadic Computing
Jinhua Guo and Sudha Ramaswamy
University of Michigan-Dearborn, USA

MONDAY 3:30PM–5:00PM BOARD EAST/WEST

SESSION 3: MODELING AND ANALYSIS OF POWER CONSERVATION TECHNIQUES

Performance Analysis of the IEEE 802.11 Power Saving Mode
Rong Zeng, Hou Jennifer and You Lin, *University of Illinois UC, USA*

Universal Hash Functions for Emerging Ultra-Low-Power Networks
K. Yuksel, J.-P. Kaps, B. Sunar, *Worcester Polytechnic Institute, USA*

Evaluation of Cartesian-based Routing Metrics for Wireless Sensor
Ayad Salhieh and Loren Schwiebert, *Wayne State University, USA*

Device Independent Remote Adaptations for Power Optimization using Distributed Middleware
Shivajit Mohapatra, Christopher Bell & Nalini Venkatasubramanian
University of California at Irvine, USA

Reward the Contribution – A Power Conservation Routing Protocol in Wireless Ad Hoc Networks Using Shapley Value
Jianfeng Cai, Udo Pooch, *Texas A&M University, USA*

TUESDAY, JANUARY 20, 2004

TUESDAY 8:30AM–10:00AM BOARD EAST/WEST

SESSION 4: DEVICES AND TECHNOLOGIES

A New Thermal Infrared Camera Calibration Approach Using Wireless MEMS Sensors
Peter Bajcsy, Sunayana Saha, *University of Illinois at Urbana-Champaign, USA*

Reconfigurable Fabric: An enabling technology for pervasive medical monitoring
Fang-Chun Chen, Foad Dabiri, Roozbeh Jafari, Eren Kursun, Vijay Raghunathan, Thomas Schoellhammer, Doug Sievers, Deborah Estrin, Glenn Reinman, Majid Sarrafzadeh, Mani Srivastava, Ben Wu, Yang Yang, *UCLA, USA*

e-TAGs: e-Textile Attached Gadgets
David I. Lehn, Craig W. Neely, Kevin Schoonover, Thomas L. Martin, Mark T. Jones *Virginia Polytechnic Institute, USA*

Efficient Web Browsing on Small-Screen Devices
Yue Weining, Wang Yue, Tan Jizhi, Wang Heng, Wang Guoping, Dong Shihai *Peking University, Beijing, China*

TUESDAY 10:30AM–12:00NOON BOARD EAST/WEST

SESSION 5: SECURITY MODELS AND METHODS

Towards A Universal Trust Model for Pervasive Computing
Rui Hea, Jianwei Niu, Jian Ma, Jianping Hua, *Bejing University of Aeronautics and Astronautics, China*

Secure Authentication and Communication of Ad hoc Networks: Application of Synchronous Dynamic Encryption System
Hamdy S. Soliman and Mohammed Omari *New Mexico Institute of Mining and Technology, USA*

A Light-Weight Authentication Scheme for Secured Routing in Ad Hoc Networks
Hongmei Deng and Dharma P. Agrawal, *University of Cincinnati, USA*

TUESDAY 1:30PM–3:00PM BOARD EAST/WEST

SESSION 6: QOS FOR REAL-TIME SYSTEMS

Power Aware Scheduling for Real-Time Systems with (m; k)-Guarantee
Gang Quaan, Linwei Niu, James P. Davis, *University of South Carolina, USA*

EQos: An Energy Efficient Qos Protocol for Wireless Sensor Networks
Hidayet Ozgur Sanli,Hasan Cam, *Arizona State University, USA*
Xiuzhen Cheng, *George Washington University, USA*

An Adaptive Call Admission Policy for Broadband Multi-Services Mobile Wireless Networks Using Stochastic Control
Gan Liu, Guangxi Zhu, Weimin Wu and Yingzhuang Liu *Huazhong University of Science and Technology, China*

Service -Based Architectural Framework of Multimedia Content Adaptation for Pervasive Computing Environment
Girma Berhe, Lionel Brunie and Jean-Marc Pierson *Lab. d'Ingenierie des Systems d'Information (LISI), France*

TUESDAY 3:30PM–5:00PM BOARD EAST/WEST

SESSION 7: SERVICE DISCOVERY

Queuing Theoretic Model for Service Discovery in Ad-hoc Networks
Dipanjan Chakraborty, Avinash Shenoi, Yelena Yesha, Yacov Yesha
Anupam Joshi, *University of Maryland, USA*
Mukesh Singhal, *University of Kentucky, USA*

Two Phase Service Discovery and Optimization Based On Mobility
Man Yuan, Jianping Hu, Jian Ma, Da Qing Petroleum Institute, Dong Feng
Beijing Univ. of Area.& Astro, China

On the Optimality of WLAN Location Determination Systems
Moustafa A. Youssef, Ashok Agrawala
University of Maryland College Park, USA

Handling Heterogeneity in Location Information Services
Ronald van Eijk, Arjan Peddemors, Johan de Heer, Alfons Salden, Petri Matt and Ville Haataja, *Telematica Instituut, Enschede, The Netherlands*

WEDNESDAY, JANUARY 21, 2004

WEDNESDAY 8:30AM–10:00AM BOARD EAST

SESSION 8: WIRELESS AD HOC NETWORKS: 1

A Novel Paradigm for Geographic Routing in Ad Hoc Networks: Comparison of Geograms and Geocircuits
A. Bruce McDonald, Sophia Fotopoulou-Prigipa, *Northeastern University, USA*

An Analytical Study of Connectivity Changes in Mobile Ad Hoc Network Simulations
Tao Lin, Scott F. Midkiff, Jahng S Park and You Lin, *Virginia Tech, USA*

Location Based Routing Overhead reduction in Manets Routing Protocols
Wilfred Gikaru, *Dresden, Germany*

WEDNESDAY 10:30AM–12:00PM BOARD EAST

SESSION 9: MODELING AND ANALYSIS

Mobile Geo-location Algorithm based on LS-SVM
Sun Guo-lin and Guo Wei
University of Electronic Science and Technology of China, China

Performance Analysis of the IEEE 802.11 Distributed Coordination Function in Ideal and Error-prone Channels
Jun Yin, Qing-An Zeng, and Dharma P. Agrawal, *University of Cincinnati, USA*

A New Backoff Algorithm for the IEEE 802.11 Distributed Coordination Function
Jing Deng, Pramod K. Varshney, Zygmunt J. Haas, *IEEE, USA*

Joint source-channel adaptive image coding with punctured convolutional codes and trellis-coded quantization
Lv Jingyuan, Yuan Dongfeng, *Shandong University, USA*

WEDNESDAY 1:30PM–3:00PM BOARD EAST

SESSION 10: DYNAMIC SYSTEMS

CLIN: A CLuster-based INterest Protocol for Wireless Sensor Networks
Bruno Galvao, *Federal University of Rio De Janeiro, Brazil*

Size-Controlled Dynamic Clustering in Mobile Wireless Sensor Networks
Tim Nieberg, Paul Havinga, Johann Hurink,
University of Twente, The Netherlands

Context-aware Dynamic Access Control for Pervasive Computing
Guangsen Zhang, *Rutgers University, USA*

WEDNESDAY 3:30PM–5:00PM BOARD EAST/WEST

SESSION 11: CONTEXT AWARENESS AND PREDICTION

An Integrated Infrastructure for Developing Sensor-Based Awareness and Decision Making Tools

Carmen M. Pancerella, Adele B. Doser, Nina M. Berry, Ron Kyker, Steve Tucker, *Sandia National Laboratories, USA*

Distributed Context Processing Architecture for an Intelligent Environment
Teddy Mantoro, C. W. Johnson, *Australian National University, Australia*

Global State Context Prediction Techniques Applied to a Smart Office Building
J. Petzold1, F. Bagci, W. Trumler, T. Ungerer, and L. Vintan
University of Augsburg and University of Sibiu, Romania

Know Your Whereabouts
Susanna Pirttikangas, Jukka Riekki, Seppo Porspakka, Juha Rög
University of Oulu, Finland

THURSDAY, JANUARY 22, 2004

THURSDAY 8:30AM–10:00AM BOARD EAST/WEST

SESSION 12: INTELLIGENT ENVIRONMENTS

Simulation of Swarm Intelligence-Based Message Broadcast in Highly Mobile Ad Hoc Networks
Michael G Kirkpatrick, Gregory R. Madey, *University of Notre Dame, USA*

Supporting Users consent Decisions to personal information collection: Fuzzy Approaches
Amr Ali Eldin and Rene Wagenaar
Delft University of Technology, The Netherlands

An Ontology-based Context Model in Intelligent Environments
Tao Gu, Xiao Hang Wang, Hung Keng Pung, Da Qing Zhang,
National University of Singapore, Singapore

Providing a Web Interface for Active Spaces
James F. Bresler, Roy H. Campbell, Jalal Al-Muhtadi
University of Illinois at Urbana-Champaign, USA

THURSDAY 10:30AM–12:00PM BOARD EAST/WEST

SESSION 13: WIRELESS AD HOC NETWORKS: 2

A Deterministic Broadcast Protocol for Ad hoc Networks
Koushik Sinha and Pradip K. Srimani, *Clemson University, USA*

Analysis of NAT-Based Internet Connectivity for Multi-Homed On-Demand Ad Hoc Networks
Paal Engelstad, Geir Egeland, Do Van Thanh, *University of Oslo, Norway*

Simulation and analysis of UDP packet exchange in wireless ad hoc groups
Satoko Itaya, Masakatsu Kosuga, Peter Davis
ATR Adaptive Communications Research Laboratories, Japan

Proximate Runner Protocol for Routing in Mobile Ad-Hoc Networks
Mukundan Venkataraman, Bhakthavathsalam R.
Indian Institute of Science, India

THURSDAY 1:30PM–3:00PM BOARD EAST/WEST

SESSION 14: DISTRIBUTED SYSTEM MIDDLEWARE

A Scalable Workbench for Implementing and Evaluating Distributed Applications in Mobile Ad Hoc Networks
Johannes K. Lehnert, Daniel Görgen, Hannes Frey, Peter Sturm
University of Trier, Germany

Enhancing Performance of Distributed Systems with Middle Agents
Yuriy Nevmyvaka, Asim Smailagic and Katia Sycara
Carnegie Mellon University, USA

SELMA: A Middleware Platform for Self-Organzing Distributed Applications in Mobile Multihop Ad-hoc Networks
Hannes Frey, *University of Trier, Germany*

Adaptive Target Tracking in Sensor Networksz
Xingbo Yu, Koushik Niyogi, Sharad Mehrotra, Nalini Venkatasubramanian
University of California at Irvine, USA

TRACK	CTS	NUCS	HSS	FOSSIL	CNDS	ICSEE
ROOM	Cockatoo	Toucan	Rousseau West	Macaw	Board East/West	Rousseau East
8:30–10:00	WMC 2004 Opening Remarks and Keynote Speech, Aviary Ballroom p. 7					
10:00–10:30	Coffee Break, Kon Tiki Ballroom p.3					
10:30–12:00	CTS Keynote Speech p. 13	Simulation Concepts p.20	Health Care Policy p. 9	Recent Trends: Control System Vendor ESSCOR p. 23 Recent Trends: Control System Vendor CAE p. 23	Modeling and Analysis of Distributed Systems p. 24	
1:30–3:00	Infrastructure for Collaborative Sys. & Apps. p.13 Collaborative Virtual Environments p. 14	Simulator Vendor Presentations p.20	Health Services I p. 9	Vendor Breakout Sessions p. 23	Models for Pervasive Computing p. 24	Using Simulation in Teaching p.12
3:00–3:30	Coffee Break, Kon Tiki Ballroom p.3					
3:30–5:00	Security & Collaboration (SS)p.14 Agent-Based Technologies In Collaborative Systems p.14	Simulator Vendor Presentations p.20	Anylogic Tutorial p. 9	Vendor Breakout Sessions p. 23	Modeling and Analysis of Power Conservation Techniques p. 24	Teaching & Using Simulation p. 12
5:30-6:00	CTS Demo I: Global MMCS p. 14					

TRACK	CTS	NUCS	HSS	FOSSIL	CNDS	ICSEE
ROOM	Cockatoo	Toucan	Rousseau West	Macaw	Board East/West	Rousseau East
8:30–10:00	WMC Keynote Speech II p. 14	Simulator Project Updates p. 20	Health Services II p. 9	EEI Approach to DCS p. 23 Objective Simulation of Fossil Power Plants p. 23	Devices and Technologies p. 25	Panel Session p. 12
10:00-10:30	Coffee Break, Kon Tiki Ballroom p.3					
10:30–12:00	Plenary Speech I p. 15	Simulator Models Benchmarking Integration p. 21	Health Services III p. 10	PPL Montana ESSCOR p. 23 Trax paper p. 23	Security Models and Methods p. 25	Educational Issues p. 12
1:30–3:00	Knowledge Management in Collaborative Systems p. 15	Simulator Upgrades & Updates p. 21	Genetic Processes p. 10	Investment Secured by Rehosting ESSCOR p. 23 Intermountain Power Service p. 23	QoS for Real-Time Systems p. 25	
3:00-3:30	Coffee Break, Kon Tiki Ballroom p.3					
3:30–5:00	Collaborative Robots p. 15	Simulator Related Topics p. 21	Bioinformatics Tutorial p. 10	On-line Simulation Applications p. 23	Service Discovery p. 26	
6:00-6:30	CTS Demo II p. 15					

Wednesday

TRACK	CTS	NUCS	NUCS MANTG	NUCS MNTA	NUCS SSNTA	NUCS WESTRAIN STARS	HSS	FOSSIL	CNDS
ROOM	Cockatoo	Toucan	Toucan	Rousseau East	Board West	Rousseau Center	Rousseau West	Macaw	Board East/West
8:30–10:00	Collaborative Systems & Development p. 16	ANS-3.5 Survey Panel p. 21					Pharmacometric Apps. p. 11	Roundtable p. 23	Wireless Ad Hoc I p. 26
10:00-10:30	Coffee Break, Kon Tiki Ballroom p.3								
10:30–12:00	Collaborative Systems R&D p. 16	Panel Regulation Changes p. 21					Medical Apps p. 11	ESSCOR Tucson Electric Power p. 23	Modeling and Analysis p. 26
1:30–3:00	E-Design and Realization of Engineered Products and Systems p. 17	Simulator Meetings p. 22	Workshop p. 22	Workshop p. 22	Workshop p. 22	Workshop p. 22	Simulation Methodologies p. 11		Dynamic Systems p. 26
3:00-3:30	Coffee Break Kon Tiki Ballroom						Coffee Break, Kon Tiki Ballroom p.3		
3:30–5:00	CTS Panel Session p. 17								Context Awareness & Prediction p. 26
5:30-6:00	CTS Demo III p. 17								

Thursday

TRACK	CTS	NUCS	CNDS
ROOM	Cockatoo	Toucan	Board East/West
8:30–10:00	Distance & Collaborative E-Learning p. 17, p. 17	USUG Annual Meeting p. 22	Intelligent Environments p. 27
10:00-10:30	Coffee Break, Kon Tiki Ballroom p.3		
10:30–12:00	Plenary Speech II p. 17	USUG Panel Discussion/Region Reports p. 22	Wireless Ad Hoc Networks II p. 27
1:30–3:00	Mobile Collaborative Work (SS) p. 18		Distributed System Middleware p. 27
3:00-3:30	Coffee Break, Kon Tiki Ballroom p.3		
3:30–5:00	Industrial Track p. 18	USUG Current Topics p. 22	
	Work-In-Progress p. 19		
5:30-6:00	Demo IV p. 19		

Registration/Information
Aviary

Exibit Area, Coffee Breaks, Exibitor Reception
Kon tiki Ballroom

Speaker's Breakfast
Multi-Purpose

Tuesday's Luncheon
Rousseau Center

FIRST FLOOR

SECOND FLOOR